Κωνσταντίνος Α. Αβραμίδης

Διδάκτωρ Μηχανικός – Αναπληρωτής Καθηγητής ΕΚΠΑ

Βιογραφικό Σημείωμα

Ιούνιος 2022

1. Προσωπικά Στοιχεία

Όνομα	Κωνσταντίνος Αβραμίδης
Ημερομηνία & Τόπος Γέννησης	29/04/1971, Αθήνα
Οικογενειακή Κατάσταση	Έγγαμος
Στρατιωτικές Υποχρεώσεις	Εκπληρωμένες (1996-98)
Διεύθυνση Εργασίας	Πανεπιστημιούπολη, 15784 Ζωγράφου Κτήριο 5, 2ος Όροφος, Γραφείο 16
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Ηλεκτρονική Διεύθυνση	kavramidis@phys.uoa.gr

2. Σπουδές

2006	Διδάκτωρ Μηχανικός, Εθνικό Μετσόβιο Πολυτεχνείο (ΕΜΠ)
1998	Διπλωματούχος Ηλεκτρολόγος Μηχανικός, ΕΜΠ
1995	Διπλωματούχος Σολίστ Πιάνου, Εθνικό Ωδείο

3. Επαγγελματική Δραστηριότητα

2022 – σήμερα	Αναπληρωτής Καθηγητής Τομέας Ηλεκτρονικής Φυσικής και Συστημάτων, Τμήμα Φυσικής, Εθνικό και Καποδιστριακό Πανεπιστήμιο Αθηνών
2013 – 2021	Ερευνητής (Research Scientist) Institute for Pulsed Power and Microwave Technology (IHM), Karlsruhe Institute of Technology (KIT), Germany
2006 – 2012	Μεταδιδακτορικός Ερευνητής Εργαστήριο Πλάσματος, Ηλεκτρονικής Δέσμης και Μη Γραμμικής Οπτικής, ΕΜΠ
1999 – 2006	Μεταπτυχιακός Ερευνητής Εργαστήριο Πλάσματος, Ηλεκτρονικής Δέσμης και Μη Γραμμικής Οπτικής, ΕΜΠ

Ερευνητικά Ενδιαφέροντα

- Φυσική της αλληλεπίδρασης σωματιδίων με ηλεκτρομαγνητικά πεδία με έμφαση στην αλληλεπίδραση ηλεκτρονικής δέσμης με υψίσυχνα ηλεκτρομαγνητικά πεδία σε μικροκυματικές πηγές ισχύος. Επίλυση ηλεκτρομαγνητικών προβλημάτων σε πολύπλοκες γεωμετρίες αγωγών ή/και διηλεκτρικών.
- Ανάπτυξη μαθηματικών μοντέλων, κατάλληλων για αριθμητική υλοποίηση, που αποσκοπούν στην κατανόηση των φυσικών μηχανισμών στα επιμέρους τμήματα των μικροκυματικών λυχνιών, δηλαδή στην πηγή ηλεκτρονικής δέσμης, στον δίαυλο δέσμης, στην κοιλότητα συντονισμού, στο οπτικό σύστημα εξόδου μικροκυματικής δέσμης και στον συλλέκτη ηλεκτρονικής δέσμης.
- Ανάπτυξη αριθμητικών κωδίκων που βασίζονται στα παραπάνω μοντέλα και έχουν προτεραιότητα την υψηλή ταχύτητα υπολογισμού ώστε να είναι εύχρηστα εργαλεία κατά τη σχεδίαση και την πειραματική δοκιμή των μικροκυματικών πηγών.
- Σχεδίαση, προσομοίωση, κατασκευή και πειραματική δοκιμή γυροτρονίων, τα οποία στοχεύουν σε συνεχή βελτίωση των επιδόσεων αναφορικά με τη συχνότητα, την ισχύ εξόδου και τον βαθμό απόδοσης, εναρμονιζόμενα με τις ολοένα αυξανόμενες απαιτήσεις των εφαρμογών. Τέτοιες είναι, για παράδειγμα, η θέρμανση πλάσματος σύντηξης, οι σχετικές διαγνωστικές διατάξεις (π.χ. Collective Thomson Scattering), καθώς και η φασματοσκοπία NMR βοηθούμενη από μικροκύματα (Nuclear Magnetic Resonance Spectroscopy with Dynamic Nuclear Polarisation).
- Φυσική και τεχνολογία του συστήματος θέρμανσης και οδήγησης ρεύματος μέσω ηλεκτρονικού κυκλοτρονικού συντονισμού (Electron Cyclotron Resonance Heating and Current Drive) στους αντιδραστήρες σύντηξης. Το σύστημα περιλαμβάνει μικροκυματικές πηγές (γυροτρόνια), πολωτές και φορτία, γραμμές μεταφοράς, παράθυρα μικροκυμάτων, καθώς και κεραίες εκπομπής μικροκυμάτων στο πλάσμα.

4. Διδακτική Δραστηριότητα

- Επίβλεψη, παρακολούθηση και εξέταση διατριβών και εργασιών
  - Επιβλέπων των μεταπτυχιακών διατριβών (MSc):
    - Chuanren Wu, “Investigations on improving broadband boundary conditions in gyrotron interaction modelling”, KIT, 2014.
    - Felix Mentgen, “Design studies towards a 140 GHz, 1.5 MW CW gyrotron (in view of an upgrade of the ECRH system at the W7-X stellarator), KIT, 2016.
    - Martin Obermaier, “Theoretical investigation on the possibility of parasitic particle-wave interaction in the gyrotron launcher”, KIT, 2018.
    - Philipp Thomas Brücker, “Theoretical study on performance improvement of MW-class gyrotrons by external signal injection”, KIT, 2021.
  - Επιβλέπων της πτυχιακής εργασίας (BSc):
    - Robert Lankau, “Studies towards a 60 GHz, 1 MW gyrotron for Collective Thomson Scattering applications”, KIT, 2016.

- Συμμετοχή στην παρακολούθηση και καθοδήγηση, στα θέματα που άπτονται της ερευνητικής δραστηριότητάς του, των διδακτορικών διατριβών (PhD):
  - Andreas Schlaich, "Time-dependent spectrum analysis of high-power gyrotrons", KIT, 2014.
  - Anton Malygin, "Design and experimental investigation of a second harmonic 20 kW class 28 GHz gyrotron for evaluation of new emitter technologies", KIT, 2016.
  - Jianghua Zhang, "Influence of emitter surface roughness and emission inhomogeneity on efficiency and stability of high power fusion gyrotrons", KIT, 2016.
  - Joachim Franck, "Systematic study of key components for a coaxial-cavity gyrotron for DEMO", KIT, 2017.
  - Parth Kalaria, "Feasibility and operational limits for a 236 GHz hollow-cavity gyrotron for DEMO", KIT, 2017.
  - Chuanren Wu, "Conceptual studies of multistage depressed collectors for gyrotrons", KIT, 2019.
  - Sebastian Ruess, "Pushing the KIT 2 MW coaxial-cavity short-pulse gyrotron towards a DEMO relevant resign", KIT, 2020.
  - Fabian Wilde, "Automated mode recovery and electronic stability control for Wendelstein 7-X gyrotrons", KIT, 2021.
  - Alexander Marek, KIT (σε εξέλιξη)
  - Tobias Ruess, KIT (σε εξέλιξη)
- Συμμετοχή στην παρακολούθηση και καθοδήγηση, στο πλαίσιο της ερευνητικής δραστηριότητάς του, της μεταπτυχιακής διατριβής (MSc):
  - Laurent Krier, "Considerations for the dual-frequency operation of 140 GHz Megawatt-class W7-X gyrotrons at 175 GHz for CTS plasma diagnostics", KIT, 2019.
- Μέλος επιτροπών εξέτασης των μεταπτυχιακών διατριβών
  - Quentin Vuillemin, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland, 2013.
  - Jérémy Genoud, EPFL, Switzerland, 2014.
  - Guillaume Le Bars, EPFL, Switzerland, 2019.

- Συνεχής παρουσία με προσκεκλημένες ομιλίες στο ετήσιο *Σχολείο Φυσικής και Τεχνολογίας Σύντηξης*, το οποίο διοργάνωνε το Εθνικό Πρόγραμμα Ελεγχόμενης Θερμοπυρηνικής Σύντηξης (ΕΠΕΘΣ) στον Βόλο το χρονικό διάστημα 2002-2011 (www.hellasfusion.gr).
- Αναγνωρισμένη συνεισφορά στο επιστημονικό περιεχόμενο και στην επιμέλεια του διδακτικού επιστημονικού βιβλίου: Ι. Λ. Βομβορίδης, *Μικροκυματικές Πηγές Ισχύος*, Εκδόσεις Συμεών, Αθήνα, 2010.

5. Διοικητική Δραστηριότητα

- Από το 2022 έως σήμερα, Επιστημονικός Συντονιστής της Ερευνητικής Ομάδας Μικροκυμάτων και Οπτικών Εφαρμογών του Τμήματος Φυσικής του Εθνικού και Καποδιστριακού Πανεπιστημίου Αθηνών για δραστηριότητες σχετικές με μικροκυματικές πηγές.
- Από το 2014 έως το 2021, συμμετοχή στη διεύθυνση (Project Leadership) του πακέτου εργασίας *Heating and Current Drive (WPHCD*) του τμήματος *Power Plant Physics and Technology (PPPT*) της Ευρωπαϊκής κοινοπραξίας για τη θερμοπυρηνική σύντηξη (EUROfusion), με την ιδιότητα του Αναπληρωτή Επικεφαλής Ερευνητικής Περιοχής (Deputy Task Area Leader) για το ερευνητικό έργο *Electron Cyclotron R&D and Advanced Technologies*. Συγκεκριμένα:
  - Συνεχής συμμετοχή στον συντονισμό, επίβλεψη και στρατηγικό σχεδιασμό της έρευνας που πραγματοποιείται στους οργανισμούς: Ινστιτούτο Τεχνολογίας Καρλσρούης (Karlsruhe Institute of Technology, Γερμανία), Πολυτεχνείο Λωζάννης (Ecole Polytechnique Fédérale de Lausanne, Ελβετία) και Εθνικό Πρόγραμμα Ελεγχόμενης Θερμοπυρηνικής Σύντηξης (ΕΠΕΘΣ, Ελλάδα).
- Από το 2019 έως το 2021, Υπεύθυνος Έργου (Project Responsible) του Ινστιτούτου Τεχνολογίας Καρλσρούης για την ανάπτυξη προηγμένου γυροτρονίου 1.5 MW, 140 GHz, προοριζόμενο για την αναβάθμιση του αντιδραστήρα σύντηξης Wendelstein 7-X (Stellarator) στο Greifswald Γερμανίας. Το έργο συγχρηματοδοτείται από το πακέτο εργασίας *WPS1* του EUROfusion.
- Από το 2007 έως και το 2012, διοικητικά καθήκοντα στο πλαίσιο της Ένωσης EURATOM – Ελληνικής Δημοκρατία (Association EUROATOM – Hellenic Republic). Συγκεκριμένα:
  - Ευρεία συμμετοχή στη σύνταξη των Ετήσιων Εκθέσεων Πεπραγμένων (https://hellasfusion.gr).
  - Αρωγή σε διοικητικά θέματα σχετικά με τη διαχείριση των χρηματοδοτούμενων προγραμμάτων.
  - Συμμετοχή στην οργάνωση και στον προγραμματισμό εργασίας της ερευνητικής ομάδας γυροτρονίου.
- Από το 2013 έως το 2021, Κύριος Ερευνητής σε πακέτα εργασίας (projects) πάνω σε πλατφόρμες υψηλής υπολογιστικής επίδοσης (High Performance Computing), κατόπιν εξασφάλισης υπολογιστικού χρόνου από την επιτυχημένη αξιολόγηση σχετικών προτάσεων. Συγκεκριμένα:
  - Τρία πακέτα εργασίας (GyroSim1-3, 2013-16) στον υπερ-υπολογιστή HELIOS, IFERC-CSC, Ιαπωνία.
  - Τέσσερα πακέτα εργασίας (Gyro2017-20, 2017-21) στην πλατφόρμα EUROfusion HP Computer (Marconi-Fusion), Ιταλία.

6. Επιστημονικό Έργο

6.1 Σύνοψη

Οι κύριες δραστηριότητες στο πλαίσιο της διδακτορικής διατριβής ήταν: (i) Ανάπτυξη θεωρητικού μοντέλου για τη φυσική της αλληλεπίδρασης δέσμης ηλεκτρονίων και ηλεκτρομαγνητικού κύματος υψηλής συχνότητας στην κοιλότητα γυροτρονίου, (ii) ανάπτυξη συστηματικής διαδικασίας επιλογής ρυθμού λειτουργίας και σχεδιασμού κοιλότητας γυροτρονίου, και (iii) μοντελοποίηση ομοαξονικών κοιλοτήτων με ρυτιδώσεις και μελέτη της ικανότητάς τους να ευνοούν τη λειτουργία του γυροτρονίου στη δεύτερη κυκλοτρονική αρμονική.

Στο πλαίσιο της μεταδιδακτορικής έρευνας, η ερευνητική δραστηριότητα επεκτάθηκε σε νέες περιοχές και περιλαμβάνει, μεταξύ άλλων, τη φυσική του ανταγωνισμού των ρυθμών σε μικροκυματικές πηγές, την εναλλακτική θεωρητική περιγραφή της αλληλεπίδρασης σωματιδίων-κύματος χρησιμοποιώντας Χαμιλτονιανό φορμαλισμό, την επανεξέταση των ευρέως χρησιμοποιούμενων παραδοχών στη μοντελοποίηση της αλληλεπίδρασης και την πρόταση προηγμένων μοντέλων προσομοίωσής της, τη μελέτη των φυσικών μηχανισμών πίσω από τις παρατηρούμενες παρασιτικές ταλαντώσεις στα γυροτρόνια, τη μελέτη του φαινομένου της εξουδετέρωσης του ηλεκτρικού φορτίου της ηλεκτρονικής δέσμης ως αποτέλεσμα του ιονισμού ουδετέρων σωματιδίων, μελέτες πολύπλοκων κοιλοτήτων με στόχο την αυξημένη εκλεκτικότητα ως προς το ρυθμό λειτουργίας, καθώς και τη διερεύνηση των επιπτώσεων της θερμικής διαστολής στη λειτουργία των γυροτρονίων χρησιμοποιώντας συνδυασμό θερμοϋδραυλικών, θερμομηχανικών και ηλεκτροδυναμικών μοντέλων.

Παράλληλα, αναπτύχθηκε η σουίτα αριθμητικών κωδίκων ΕΥΡΥΔΙΚΗ (EURIDICE) για την προσομοίωση της αλληλεπίδρασης ηλεκτρονίων-κύματος στα γυροτρόνια και άλλες γυρο-διατάξεις (gyro-devices) και τη σχεδίαση κοιλοτήτων γυροτρονίων. Η πρώτη εκδοχή της εμφανίστηκε το 2008. Η ΕΥΡΥΔΙΚΗ είναι η πλέον εξελιγμένη σουίτα σε σχέση με τους αντίστοιχους υπάρχοντες ευρωπαϊκούς αριθμητικούς κώδικες και τα τελευταία επτά χρόνια είναι ο κύριος κώδικας αλληλεπίδρασης που χρησιμοποιείται στην ανάπτυξη των ευρωπαϊκών γυροτρονίων για τους αντιδραστήρες σύντηξης ITER (Γαλλία), Wendelstein 7-X (Γερμανία) και τον σχεδιαζόμενο ευρωπαϊκό αντιδραστήρα DEMO.

Συγχρόνως με την παραπάνω ερευνητική δραστηριότητα στη φυσική και στην προσομοίωση μικροκυματικών πηγών, εξειδικευμένες μελέτες για κάθε γυροτρόνιο που αναπτύχθηκε ή αναπτύσσεται στην Ευρώπη την τελευταία δεκαπενταετία συνέβαλαν σημαντικά σε όλα τα στάδια της ανάπτυξής του, δηλαδή τη σχεδίαση, την τεχνολογική ανάπτυξη και την πειραματική δοκιμή. Αυτό αφορά γυροτρόνια υψηλής ισχύος (MW) για αντιδραστήρες σύντηξης, καθώς και γυροτρόνια χαμηλής ισχύος (kW) για φασματοσκοπία και για βιομηχανικές εφαρμογές. Επίσης υπάρχει ενεργός συμμετοχή στον σχεδιασμό του συστήματος θέρμανσης και οδήγησης ρεύματος μέσω ηλεκτρονικού κυκλοτρονικού συντονισμού (ECRH &CD) για το ευρωπαϊκό DEMO.

6.2 Δημοσιεύσεις

Διδακτορική Διατριβή

- *Σχεδίαση και προσομοίωση ομοαξονικών γυροτρονίων (με έμφαση στη λειτουργία δεύτερης αρμονικής)*, Σχολή Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών, ΕΜΠ, 2006, (Επιβλέπων Καθηγητής: Ι. Λ. Βομβορίδης).

Άρθρα σε Διεθνή Επιστημονικά Περιοδικά

1. T. Rzesnicki, Z. C. Ioannidis, K. A. Avramidis, I. Chelis, G. Gantenbein, J.-P. Hogge, S. Illy, J. Jelonnek, J. Jin, A. Leggieri, F. Legrand, I. Gr. Pagonakis, F. Sanchez, M. Thumm, "Experimental testing of the European TH1509U 170-GHz 1-MW CW industrial gyrotron – Long pulse operation", *IEEE Electron Device Letters*, vol. 43, No. 4, pp. 623 - 626, April 2022. https://doi.org/10.1109/LED.2022.3152184
2. L. Savoldi, K. A. Avramidis, F. Albajar, S. Alberti, A. Leggieri, and F. Sanchez, "Multiphysics simulator for the resonator of MW-class CW gyrotrons for fusion applications: a validation roadmap", *MDPI Energies*, vol. 14, 8027, 15pp, December 2021. https://doi.org/10.3390/en14238027
3. C. Wu, G. Aiello, K. Avramidis, A. Bruschi, E. Fable, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, S. Illy, F. Janky, J. Jelonnek, O. Kudlacek, A. Moro, E. Poli, T. Ruess, T. Scherer, R. Schramm, M. Siccinio, A. Snicker, D. Strauss, G. Suárez López, G. Tardini, M. Thumm, M. Q. Tran, H. Zohm, "Basic design considerations for a frequency step-tunable electron cyclotron wave system to suppress NTMs in DEMO", *Fusion Engineering and Design*, vol. 173, 112931, November 2021. https://doi.org/10.1016/j.fusengdes.2021.112931
4. V. I. Shcherbinin, K. A. Avramidis, I. Gr. Pagonakis, M. Thumm, John Jelonnek, "Large power increase enabled by high-Q diamond-loaded cavities for Terahertz gyrotrons", Journal of Infrared, Millimeter, and Terahertz Waves, vol. 42, pp. 863-877, September 2021. https://doi.org/10.1007/s10762-021-00814-6
5. G. Aiello, K. A. Avramidis, T. Franke, G. Gantenbein, J. Jelonnek, A. Meier, T. Scherer, S. Schreck, D. Strauss, M. Thumm, M. Q. Tran, C. Wild, and E. Woerner, "Large area diamond disk growth experiments and thermo-mechanical investigations for the Brewster-angle window in DEMO", *IEEE Trans. Electron Devices*, vol. 68, No. 9, pp. 4669 - 4674, June 2021. https://doi.org/10.1109/TED.2021.3088077
6. S. Stanculovic, R. Difonzo, A. Allio, K. A. Avramidis, P. Brücker, G. Gantenbein, S. Illy, J. Jelonnek, P. C. Kalaria, M. Misko, T. Rzesnicki, and L. Savoldi, "Calibration of the KIT test setup for the cooling tests of a gyrotron cavity full-size mock-up equipped with mini-channels", *Fusion Engineering and Design*, vol. 172, pp. 112744, June 2021. https://doi.org/10.1016/j.fusengdes.2021.112744
7. T. Franke, G. Aiello, K. Avramidis, C. Bachmann, B. Baiocchi, C. Baylard, A. Bruschi, D. Chauvin, A. Cufar, R. Chavan, C. Gliss, F. Fanale, L. Figini, G. Gantenbein, S. Garavaglia, G. Granucci, J. Jelonnek, G. S. López, A. Moro, M. Moscheni, N. Rispoli, M. Siccinio, P. Spaeh, D. Strauss, F. Subba, I. Tigelis, M. Q. Tran, C. Tsironis, C. Wu, H. Zohm, "Integration concept of an Electron Cyclotron System in DEMO", *Fusion Engineering and Design*, vol. 168, pp. 112653, May 2021. https://doi.org/10.1016/j.fusengdes.2021.112653
8. K. A. Avramidis, Z. C. Ioannidis, S. Illy, J. Jin, T. Ruess, G. Aiello, M. Thumm, and J. Jelonnek, "Multifaceted simulations reproducing experimental results from the 1.5 MW 140 GHz pre-

prototype gyrotron for W7-X", *IEEE Trans. Electron Devices*, vol. 68, No. 6, pp. 3063 - 3069, May 2021. https://doi.org/10.1109/TED.2021.3075653

9. Z. C. Ioannidis, K. A. Avramidis, T. Rzesnicki, I. Chelis, G. Gantenbein, S. Illy, J. Jin, I. Gr. Pagonakis, M. Thumm, J. Jelonnek, "Generation of 1.5MW-140GHz pulses with the modular pre-prototype gyrotron for W7-X", *IEEE Electron Device Letters*, vol. 42, No. 6, pp. 939 - 942, April 2021. https://doi.org/10.1109/LED.2021.3073221
10. K. A. Avramidis, Z. C. Ioannidis, G. Aiello, P. Bénin, I. Chelis, A. Dinklage, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, H. P. Laqua, A. Leggieri, F. Legrand, A. Marek, S. Marsen5, I. Gr. Pagonakis, T. Ruess1 T. Rzesnicki, T. Scherer, D. Strauss, M. Thumm, I. Tigelis, D. Wagner, J. Weggen, R. C. Wolf, and the Wendelstein 7-X Team, "Towards a 1.5 MW, 140 GHz gyrotron for the upgraded ECRH system at W7-X", *Fusion Engineering and Design*, vol. 164, pp. 112173, March 2021. https://doi.org/10.1016/j.fusengdes.2020.112173
11. G. Aiello, K. A. Avramidis, G. Gantenbein, J. Jelonnek, J. Jin, H. Laqua, A. Meier, T. Scherer, D. Strauss, M. Thumm, "Design validation of the gyrotron diamond output window for the upgrade of the ECRH system at W7-X", *Fusion Engineering and Design*, vol. 165, pp. 112262, January 2021.https://doi.org/10.1016/j.fusengdes.2021.112262
12. V. I. Shcherbinin, K. A. Avramidis, M. Thumm, John Jelonnek, "Mode discrimination by lossy dielectric rods in cavities of second-harmonic gyrotrons", *Journal of Infrared, Millimeter, and THz Waves*, vol. 42, pp. 93–105, January 2021. https://doi.org/10.1007/s10762-020-00760-9
13. L. Krier, I. Gr. Pagonakis, K. A. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, H. P. Laqua, A. Marek, D. Moseev, M. Thumm, and W7-X Team, "Theoretical investigation on possible operation of a 140 GHz 1 MW gyrotron at 175 GHz for CTS plasma diagnostics at W7-X", *Phys. Plasmas* vol. 27, p. 113107, November 2020. https://doi.org/10.1063/5.0022151
14. A. Marek, K. A. Avramidis, N. S. Ginzburg, S. Illy, J. Jelonnek, "Extended feedback system for coupled sub-THz gyro-devices to provide new regimes of operation", *IEEE Trans. Electron Devices*, vol. 67, no. 12, pp. 5729-5735, December 2020. https://doi.org/10.1109/TED.2020.3028531
15. G. Aiello, S. Schreck, K. A. Avramidis, T. Franke, G. Gantenbein, J. Jelonnek, A. Meier, T. Scherer, D. Strauss, M. Thumm, M. Q. Tran, C. Wild, E. Woerner, "Towards large area CVD diamond disks for Brewster-angle windows", Fusion Engineering and Design, vol. 157, 111818, August 2020. https://doi.org/10.1016/j.fusengdes.2020.111818
16. V. I. Shcherbinin, Y. K. Moskvitina, K. A. Avramidis,and J. Jelonnek, "Improved mode selection in coaxial cavities for subterahertz second-harmonic gyrotrons", *IEEE Trans. Electron Devices*, vol. 67, no. 7, pp. 2933-2939, July 2020. https://doi.org/10.1109/TED.2020.2996179
17. D. Moseev, H. P. Laqua, T. Stange, I. Abramovic, S. K. Nielsen, S. Äkäslompolo, K. Avramidis, H. Braune, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, W. Kasparek, L. Krier, S. B. Korsholm, C. Lechte, A. Marek, S. Marsen, M. Nishiura, I. Pagonakis, M. Salewski, J. Rasmussen, A. Tancetti, M. Thumm, R. C. Wolf and W7-X Team, "Collective Thomson scattering diagnostic for Wendelstein 7-X at 175 GHz", *Journal of Instrumentation,* vol. 15, C05035, May 2020. https://doi.org/10.1088/1748-0221/15/05/C05035
18. I. Gr. Pagonakis, K. A. Avramidis, G. Gantenbein, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, B. Piosczyk, S. Ruess, T. Ruess, T. Rzesnicki, M. Thumm, and J. Jelonnek, "Triode magnetron injection gun for the KIT 2 MW 170 GHz coaxial cavity gyrotron", *Phys. Plasmas* vol. 27, p. 023105, February 2020. https://doi.org/10.1063/1.5132615
19. V. I. Shcherbinin, V. I. Tkachenko, K. A. Avramidis, and J. Jelonnek, "Coaxial cavity with stepped inner conductor for a sub-terahertz second-harmonic gyrotron with broadband continuous frequency tuning", *IEEE Trans. Electron Devices,* vol. 66, no. 12, pp. 5313-5320, December 2019. https://doi.org/10.1109/TED.2019.2944647
20. G. Aiello, T. Scherer, K. Avramidis, N. Casal, T. Franke, M. Gagliardi, G. Gantenbein, M. Henderson, J. Jelonnek, A. Meier, G. Saibene, S. Schreck, D. Strauss, M. Thumm, M. Q. Tran,

C. Wild, E. Woerner, "Diamond window technology for EC heating and current drive – state of the art", *Fusion Science and Technology*, vol. 75, pp. 719–729, October 2019. https://doi.org/10.1080/15361055.2019.1643690

21. F. Wilde, S. Marsen, T. Stange, D. Moseev, J. W. Oosterbeek, H. P. Laqua, R.C. Wolf, K. Avramidis, G. Gantenbein, I. Gr. Pagonakis, S. Illy, J. Jelonnek M. K. Thumm, and W7-X team, "Automated mode recovery for gyrotrons demonstrated at Wendelstein 7-X", *Fusion Engineering and Design*, vol. 148, pp. 111258, July 2019. https://doi.org/10.1016/j.fusengdes.2019.111258
22. P. C. Kalaria, M. George, S. Illy, K. A. Avramidis, G. Gantenbein, S. Ruess, M. Thumm, and J. Jelonnek, "Multi-physics modelling of insert cooling system for a 170 GHz, 2 MW long-pulse coaxial-cavity gyrotron", *IEEE Trans. Electron Devices,* vol. 66, no. 9, pp. 4008-4015, September 2019. https://doi.org/10.1109/TED.2019.2928222
23. K. A. Avramidis, G. Aiello, S. Alberti, P. T. Brücker, A. Bruschi, J. Chelis, T. Franke, G. Gantenbein, S. Garavaglia, J. Genoud, M. George, G. Granucci, G. Grossetti, J.-P. Hogge, S. Illy, Z. C. Ioannidis, J. Jelonnek, J. Jin, P. C. Kalaria, G. P. Latsas, A. Marek, I. Gr. Pagonakis, D. V. Peponis, S. Ruess, T. Ruess, T. Rzesnicki, T. Scherer, M. Schmid, D. Strauss, M. Thumm, J. Tigelis, C. Wu, A. Zein, A. Zisis, and M. Q. Tran, "Overview of recent gyrotron R&D towards DEMO within EUROfusion Work Package Heating and Current Drive", *Nuclear Fusion*, vol. 59, 066014 (9pp), March 2019. https://doi.org/10.1088/1741-4326/ab12f9
24. Z. C. Ioannidis, K. A. Avramidis, G. Gantenbein, S. Illy, T. Kobarg, I. Gr. Pagonakis, T. Rzesnicki, and J. Jelonnek, "Development and experimental verification of an XY-table for the optimization of the alignment of high-power gyrotrons", *IEEE Trans. Electron Devices,* vol. 66, no. 4, pp. 1954-1959, April 2019. https://doi.org/10.1109/TED.2019.2899163
25. T. Ruess, K. A. Avramidis, G. Gantenbein, Z. Ioannidis, S. Illy, F.-C. Lutz, A. Marek, S. Ruess, T. Rzesnicki, M. Thumm, D. Wagner, J. Weggen, J. Jelonnek, "Computer-controlled test system for the excitation of very high-order modes in highly oversized waveguides", *Journal of Infrared Millimeter and Terahertz Waves*, vol. 40, no. 3, pp. 257–268, March 2019. https://doi.org/10.1007/s10762-018-0566-3
26. C. Wu, I. Gr. Pagonakis, D. Albert, K. A. Avramidis, G. Gantenbein, S. Illy, M. Thumm, and J. Jelonnek, "Gyrotron multistage depressed collector based on $E \times B$ drift concept using azimuthal electric field. II: upgraded designs", *Physics of Plasmas,* vol. 26, pp. 013108, January 2019. https://doi.org/10.1063/1.5078861
27. A. V. Maksimenko, V. I. Shcherbinin, A. V. Hlushchenko, V. I. Tkachenko, K. A. Avramidis, and J. Jelonnek, "Starting currents for eigenmodes of a gyrotron cavity with mode conversion", *IEEE Trans. Electron Devices,* vol. 66, no. 3, pp. 1552-1558, March 2019. https://doi.org/10.1109/TED.2019.2893888
28. Z. C. Ioannidis, F. Albajar, S. Alberti, K. A. Avramidis, W. Bin, T. Bonicelli, A. Bruschi, J. Chelis, F. Fanale, G. Gantenbein, J. Genoud, J.-P. Hogge, V. Hermann, S. Illy, J. Jelonnek, J. Jin, W. Kasparek, G. P. Latsas, F. Legrand, C. Lechte, I. Gr. Pagonakis, T. Rzesnicki, F. Sánchez, C. Schlatter, M. Schmid, I. G. Tigelis, M. Thumm, M. Q. Tran, J. Jelonnek, A. Zisis, A. Zein, "Recent Experiments with the European 1 MW, 170 GHz Industrial CW and Short-Pulse Gyrotrons for ITER", *Fusion Engineering and Design*, vol. 146, pp. 349-352, September 2019. https://doi.org/10.1016/j.fusengdes.2018.12.065
29. G. Gantenbein, K. Avramidis, S. Illy, Z. C. Ioannidis, J. Jin, J. Jelonnek, P. Kalaria, I. Gr. Pagonakis, S. Ruess, T. Ruess, T. Rzesnicki, M. Thumm, C. Wu, "New trends of gyrotron development at KIT: An overview on recent investigations",*Fusion Engineering and Design*, vol. 146, pp. 341-344, December 2018. https://doi.org/10.1016/j.fusengdes.2018.12.063

30. A. Bertinetti, F. Albajar, K. A. Avramidis, F. Cau, F. Cismondi, G. Gantenbein, J. Jelonnek, P. C. Kalaria, S. Ruess, T. Rzesnicki, L. Savoldi, R. Zanino, "Analysis of an actively-cooled coaxial cavity in a 170 GHz, 2 MW gyrotron using the multi-physics computational tool MUCCA", *Fusion Engineering and Design*, vol. 146, pp. 74-77, September 2019. https://doi.org/10.1016/j.fusengdes.2018.11.033

31. J. Genoud, S. Alberti, T. M. Tran, G. Le Bars, P. Kaminski, J-Ph. Hogge, K. A. Avramidis, M. Q. Tran, "Parasitic oscillations in smooth-wall circular symmetric gyrotron beam ducts", *International Journal of Infrared and Millimeter Waves*, vol. 40, no. 2, pp. 131-149, October 2018. https://doi.org/10.1007/s10762-018-0548-5

32. S. Ruess, K. A. Avramidis, M. Fuchs, G. Gantenbein, S. Illy, P. C. Kalaria, T. Kobarg, I. Gr. Pagonakis, T. Rzesnicki, M. Thumm, J. Weggen, and J. Jelonnek, "KIT coaxial gyrotron development: From ITER toward DEMO", *International Journal of Microwave and Wireless Technologies*, vol. 10, pp. 547-555, July 2018. https://doi.org/10.1017/S1759078718000144

33. M.-C. Lin, S. Illy, K. A. Avramidis, M. Thumm, and J. Jelonnek, "Study on after cavity interaction in a 140 GHz model $TE_{0,3}$ gyrotron using 3-D CFDTD PIC simulation", *IEEE Trans. Plasma Sci*. vol. 46, no. 6, pp. 1937-1942, June 2018. https://doi.org/10.1109/TPS.2018.2805521

34. Z. C. Ioannidis, I. Gr. Pagonakis, K. A. Avramidis, S. Illy, T. Rzesnicki, I. G. Tigelis, G. Gantenbein, and J. Jelonnek, "An improved diagnostic device for magnetron injection guns of high-power gyrotrons", *IEEE Trans. Electron Devices,* vol. 65, no. 5, pp. 2294-2300, June 2018. https://doi.org/10.1109/TED.2018.2793341

35. K. A. Avramidis, A. Bertinetti, F. Albajar, F. Cau, F. Cismondi, G. Gantenbein, S. Illy, Z. C. Ioannidis, J. Jelonnek, F. Legrand, I. Gr. Pagonakis, Y. Rozier, T. Rzesnicki, L. Savoldi, M. Thumm, R. Zanino, "Numerical studies on the influence of cavity thermal expansion on the performance of a high-power gyrotron", *IEEE Trans. Electron Devices,* vol. 65, no. 6, pp. 2308 - 2315, June 2018. https://doi.org/10.1109/TED.2017.2782365

36. I. G. Chelis, K. A. Avramidis, Z. C. Ioannidis, and I. G. Tigelis, "Improved suppression of parasitic oscillations in gyrotron beam tunnels by proper selection of the lossy ceramic material", *IEEE Trans. Electron Devices,* vol. 65, no. 6, pp. 2301 - 2307, June 2018. https://doi.org/10.1109/TED.2017.2784198

37. I. Gr. Pagonakis, S. Illy, Z. C. Ioannidis, T. Rzesnicki, K. A. Avramidis, G. Gantenbein, T. Kobarg, B. Piosczyk, M. Thumm, and J. Jelonnek, "Numerical investigation on spent beam deceleration schemes for depressed collector of a high power gyrotron", *IEEE Trans. Electron Devices,* vol. 65, no. 6, pp. 2321 - 2326, June 2018. https://doi.org/10.1109/TED.2017.2784185

38. S. Garavaglia, G. Aiello, S. Alberti, K. Avramidis, A. Bruschi, I. G. Chelis, J. Franck, G. Gantenbein, G. Granucci, G. Grossetti, K. Hizanidis, S. Illy, J. Jelonnek, P. Kalaria, A. Moro, I. Pagonakis, D. V. Peponis, E. Poli, N. Rispoli, T. Rzesnicki, S. Ruess, T. Scherer, D. Strauss, I. Tigelis, C. Tsironis, C. Wu, T. Franke, and M.-Q. Tran, "EU DEMO EC System preliminary conceptual design", *Fusion Engineering and Design*, vol. 136, pp. 1173–1177, May 2018. https://doi.org/10.1016/j.fusengdes.2018.04.097

39. T. Franke, P. Agostinetti, G. Aiello, K. Avramidis, Ch. Bachmann, A. Bruschi, G. Federici, S. Garavaglia, G. Granucci, G. Grossetti, J. Jelonnek, J.-M. Noterdaeme, A. Simonin, T. Scherer, P. Sonato, D. Strauss, M. Q. Tran, A. Valentine, P. Vincenzi, R. Wenninger, S. Zheng, "Review of the innovative H&CD designs and the impact of their configurations on the performance of the EU DEMO fusion power plant reactor", *IEEE Trans. Plasma Sci*. vol. 46, no. 5, pp. 1633-1640, May 2018. https://doi.org/10.1109/TPS.2018.2800405

40. M. Thumm, K. A. Avramidis, J. Franck, G. Gantenbein, S. Illy, J. Jin P. C. Kalaria, I. Gr. Pagonakis, S. Ruess, C. Wu, and J. Jelonnek, "Design studies and analysis of operational limits

of 0.24-THz gyrotrons for DEMO", *Terahertz Science and Technology*, vol. 11, no. 1, pp. 1-20, March 2018. https://doi.org/10.11906/TST.001-020.2018.03.01

41. C. Wu, I. Gr. Pagonakis, K. A. Avramidis, G. Gantenbein, S. Illy, M. Thumm, and J. Jelonnek, "Gyrotron multistage depressed collector based on E×B drift concept using azimuthal electric field. Part I: basic design", *Physics of Plasmas,* vol. 25, pp. 033108, March 2018. https://doi.org/10.1063/1.5016296
42. G. Granucci, G. Aiello, S. Alberti, K. A. Avramidis, F. Braunmüller, A.Bruschi, J. Chelis, J. Franck, L.Figini, G. Gantenbein, S. Garavaglia, G. Grossetti, S. Illy, Z. Ioannidis, J. Jelonnek, P. Kalaria, G. Latsas, A. Moro, I. Gr. Pagonakis, D. Peponis, E. Poli, N. Rispoli, T. Rzesnicki, T. Scherer, D. Strauss, M. Thumm, I. Tigelis, C.Tsironis, C. Wu, T. Franke and M. Q. Tran, "Conceptual design of the DEMO EC-System: Main developments and R&D achievements", *Nuclear Fusion*, vol. 57, 116009 (8 p), August 2017. https://doi.org/10.1088/1741-4326/aa7b15
43. Z. C. Ioannidis, T. Rzesnicki, F. Albajar, S. Alberti, K. A. Avramidis, W. Bin, T. Bonicelli, A. Bruschi, I. Chelis, P.-E. Frigot, G. Gantenbein, V. Hermann, J.-P. Hogge, S. Illy, J. Jin, J. Jelonnek, W. Kasparek, G. Latsas, C. Lechte, F. Legrand, T. Kobarg, I. Gr. Pagonakis, Y. Rozier, C. Schlatter, M. Schmid, I. G. Tigelis, M. Thumm, M. Q. Tran, A. Zein, and A. Zisis, "CW experiments with the EU 1-MW, 170-GHz industrial prototype gyrotron for ITER at KIT", *IEEE Trans. Electron Devices*, vol. 64, no. 9, pp. 3885 - 3892, September 2017. https://doi.org/10.1109/TED.2017.2730242
44. J. Jelonnek, G. Aiello, A. Alberti, K. Avramidis, F. Braunmueller, A. Bruschi, J. Chelis, J. Franck, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, G. Grossetti, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, G. P. Latsas, I. Gr. Pagonakis, T. Rzesnicki, S. Ruess, T. Scherer, M. Schmid, D. Strauss, C. Wu, I. Tigelis, M. Thumm, M. Q. Tran, "Design considerations for future DEMO gyrotrons: A review on related gyrotron activities within EUROfusion", *Fusion Engineering and Design,* vol. 123, pp. 241 - 246, July 2017. https://doi.org/10.1016/j.fusengdes.2017.01.047
45. A. Bertinetti, K. A. Avramidis, F. Albajar, F.Cau, F. Cismondi, Y. Rozier, L. Savoldi, R. Zanino, "Multi-physics analysis of a 1 MW gyrotron cavity cooled by mini-channels", *Fusion Engineering and Design,* vol. 123, pp. 313 - 316, May 2017. https://doi.org/10.1016/j.fusengdes.2017.05.016
46. I. Gr. Pagonakis, K. A. Avramidis, G. Gantenbein, T. Rzesnicki, A. Samartsev, and J. Jelonnek, "Magnetic field profile analysis for gyrotron experimental investigation", *Physics of Plasmas,* vol. 24, 033102 (10p), March 2017. http://dx.doi.org/10.1063/1.4977460
47. J. Zhang, S. Illy, I. Gr. Pagonakis, T. Rzesnicki, K. A. Avramidis, A. Malygin, S. Ruess, A. Samartsev, G. Dammertz, B. Piosczyk, G. Gantenbein, M. Thumm, "Evaluation and influence of gyrotron cathode emission inhomogeneity", *IEEE Trans. Electron Devices*, vol. 64, no. 3, pp. 1307-1314, March 2017. https://doi.org/10.1109/TED.2017.2655147
48. T. Rzesnicki, F. Albajar, S. Alberti, K. A. Avramidis, W. Bin, T. Bonicelli, F. Braunmueller, A. Bruschi, J. Chelis, P.-E. Frigot, G. Gantenbein, V. Hermann, J.-P. Hogge, S. Illy, Z. C. Ioannidis, J. Jin, J. Jelonnek, W. Kasparek, G. P. Latsas, C. Lechte, M. Lontano, T. Kobarg, I. G. Pagonakis, Y. Rozier, C. Schlatter, M. Schmid, I. G. Tigelis, M. Thumm, M. Q. Tran, M. Losert, J. L. Vomvoridis, A. Zisis, "Experimental verification of the European 1 MW, 170 GHz industrial CW prototype gyrotron for ITER", *Fusion Engineering and Design,* vol. 123, pp. 490-494, February 2017. https://doi.org/10.1016/j.fusengdes.2017.02.021
49. T. Franke, P. Agostinetti, K. Avramidis, A. Bader, Ch. Bachmann, W. Biel, T. Bolzonella, S. Ciattaglia, M. Coleman, F. Cismondi, G. Granucci, G. Grossetti, J. Jelonnek, I. Jenkins, M. Kalsey, R. Kembleton, N. Mantel, J. M. Noterdaeme, N. Rispoli, A. Simonin, P. Sonato, M. Q. Tran, P. Vincenzi, R. Wenninger, "Heating & Current Drive Efficiencies, TBR and RAMI

considerations for DEMO", *Fusion Engineering and Design,* vol. 123, pp. 495-499, February 2017. https://doi.org/10.1016/j.fusengdes.2017.02.007

50. P. C. Kalaria, K. A. Avramidis, J. Franck, G. Gantenbein, S. Illy, J. Jin, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "RF behavior and launcher design for a fast frequency step-tunable 236 GHz gyrotron for DEMO", *Frequenz*, ISSN (Online) 2191-6349, ISSN (Print) 0016-1136, December 2016. https://doi.org/10.1515/freq-2016-0212
51. J. Jelonnek, G. Gantenbein, K. Avramidis, J. Franck, S. Illy, Z. Ioannidis, J. Jin, P. Kalaria, I. Pagonakis, S. Ruess, T. Rzesnicki, T. Scherer, M. Schmid, D. Strauss, C. Wu und M. Thumm, "Gyrotron-Forschung und -Entwicklung am KIT", *Vakuum in Forschung und Praxis*, vol. 28, no. 6, pp. 21-27, November 2016 (in German). https://doi.org/10.1002/vipr.201600631
52. P. C. Kalaria, K. Avramidis, J. Franck, G. Gantenbein, S. Illy, I. Pagonakis, M. Thumm, and J. Jelonnek, "Systematic cavity design approach for a multi-frequency gyrotron for DEMO and study of its RF behavior", *Physics of Plasmas*, vol. 23, 092503 (9p), September 2016. https://doi.org/10.1063/1.4962238
53. J. Franck, K. A. Avramidis, G. Gantenbein, S. Illy, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "Analytic voltage depression calculation of arbitrary electron beams in misaligned coaxial gyrotron cavities", *IEEE Trans. Electron Devices,* vol. 63, no. 9, pp. 3740-3746, September 2016. https://doi.org/10.1109/TED.2016.2592533
54. Z. C. Ioannidis, K. A. Avramidis, and I. G. Tigelis, "Selectivity properties of coaxial gyrotron cavities with mode converting corrugations", *IEEE Trans. Electron Devices*, vol. 63, no. 3, pp. 1299 - 1306, March 2016. https://doi.org/10.1109/TED.2016.2518217
55. I. Gr. Pagonakis, B. Piosczyk, J. Zhang, S. Illy, T. Rzesnicki, J.-P. Hogge, K. Avramidis, G. Gantenbein, M. Thumm, and J. Jelonnek, "Electron trapping mechanisms in magnetron injection guns", *Physics of Plasmas,* vol. 23, 023105 (11p), February 2016. https://doi.org/10.1063/1.4941705
56. J. Zhang, S. Illy, I. Gr. Pagonakis, K. A. Avramidis, M. Thumm, and J. Jelonnek, "Influence of emitter surface roughness on high power fusion gyrotron operation", *Nucl. Fusion*, vol. 56, no. 2, pp. 026002 (7p), December 2015. https://doi.org/10.1088/0029-5515/56/2/026002
57. K. A. Avramidis, "Investigations and advanced concepts on gyrotron interaction modeling and simulations", *Physics of Plasmas,* vol. 22, 123114, December 2015. https://doi.org/10.1063/1.4938043
58. M. Thumm, J. Franck, P.C. Kalaria, K.A. Avramidis, G. Gantenbein, S. Illy, I.G. Pagonakis, M. Schmid, C. Wu, J. Zhang, and J. Jelonnek, "Towards a 0.24-THz, 1-to 2-MW-class gyrotron for DEMO", *Terahertz Science and Technology*, vol. 8, no. 3, pp. 85-100, September 2015. http://www.tstnetwork.org/10.11906/TST.085-100.2015.09.09
59. A. Schlaich, C. Wu, I. Pagonakis, K. Avramidis, S. Illy, G. Gantenbein, J. Jelonnek, M. Thumm, "Frequency-based investigation of charge neutralization processes and thermal cavity expansion in gyrotrons", *Journal of Infrared Millimeter and THz Waves*, vol. 36, no. 9, pp. 797-818, September 2015. https://doi.org/10.1007/s10762-015-0177-1
60. Chuanren Wu, K. A. Avramidis, M. Thumm, and J. Jelonnek, "An improved broadband boundary condition for the RF field in gyrotron interaction modeling", *IEEE Trans. Microwave Theory and Techniques*, vol. 63, no. 8, pp. 2459 - 2467, August 2015. https://doi.org/10.1109/TMTT.2015.2433270
61. A. Samartsev, K. A. Avramidis, G. Gantenbein, G. Dammertz, M. Thumm, and J. Jelonnek, "Efficient frequency step-tunable Megawatt-class D-band gyrotron", *IEEE Trans. Electron Devices*, vol. 62, no. 7, pp. 2327-2332, July 2015. https://doi.org/10.1109/TED.2015.2433016

62. I. G. Chelis, K. A. Avramidis, and J. L. Vomvoridis, "Resonant modes of disk-loaded cylindrical structures with open boundaries", *IEEE Trans. Microwave Theory and Techniques*, vol. 63, no. 6, pp. 1781-1790, June 2015. https://doi.org/10.1109/TMTT.2015.2420093

63. K. A. Avramidis, Z. C. Ioannidis, S. Kern, A. Samartsev, I. Gr. Pagonakis, I. G. Tigelis, and J. Jelonnek, "A comparative study on the modeling of dynamic after-cavity interaction in gyrotrons", *Physics of Plasmas*, vol. 22, 053106, May 2015. http://dx.doi.org/10.1063/1.4919924

64. I. Gr. Pagonakis, F. Albajar, S. Alberti, K. Avramidis, T. Bonicelli, F. Braunmueller., A. Bruschi, I. Chelis, F. Cismondi, G. Gantenbein, V. Hermann, K. Hesch, J.-P. Hogge, J. Jelonnek, J. Jin, S. Illy, Z. C. Ioannidis, T. Kobarg, G. P. Latsas, F. Legrand, M. Lontano, B. Piosczyk, Y. Rozier, T. Rzesnicki, C. Schlatter, M. Thumm, I. G. Tigelis, M.-Q. Tran, T.-M. Tran, J. Weggen, J. L. Vomvoridis, "Status of the development of the EU 170 GHz/1 MW/CW gyrotron", *Fusion Engineering and Design*, vol. 96–97, pp. 149–154, April 2015. https://doi.org/10.1016/j.fusengdes.2015.02.050

65. M. Schmid, J. Franck, P. Kalaria, K. A. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, I. G. Pagonakis, T. Rzesnicki, M. Thumm, "Gyrotron development at KIT: FULGOR test facility and gyrotron concepts for DEMO" *Fusion Engineering and Design*, vol. 96-97, pp. 589-592, April 2015. https://doi.org/10.1016/j.fusengdes.2015.03.003

66. Z. C. Ioannidis, K. A. Avramidis, and I. G. Tigelis, "Open-ended coaxial cavities with corrugated inner and outer walls", *Journal of Infrared, Millimeter, and Terahertz Waves*, vol. 36, pp. 461–473, March 2015. https://doi.org/10.1007/s10762-015-0152-x

67. J. Franck, K. Avramidis, G. Gantenbein, S. Illy, J. Jin, M. Thumm, and J. Jelonnek, "A generic mode selection strategy for high-order mode gyrotrons operating at multiple frequencies", *IAEA Nuclear Fusion* vol. 55, 013005 (6pp), January 2015. https://doi.org/10.1088/0029-5515/55/1/013005

68. J. Jelonnek, F. Albajar, S. Alberti, K. Avramidis, P. Benin, T. Bonicelli, F. Cismondi, V. Erckmann, G. Gantenbein, K. Hesch, J.-P. Hogge, S. Illy, Z. C. Ioannidis, J. Jin, H. Laqua, G. P. Latsas, F. Legrand, G. Michel, I. Gr. Pagonakis, B. Piosczyk, Y. Rozier, T. Rzesnicki, I. G. Tigelis, M. Thumm, M. Q. Tran, J. L. Vomvoridis, "From series production of gyrotrons for W7-X toward EU-1 MW gyrotrons for ITER", *IEEE Trans. Plasma Sci*., vol. 42, no. 5, pp. 1135-1144, May 2014. https://doi.org/10.1109/TPS.2014.2301839

69. O. Dumbrajs, K. A. Avramidis, J. Franck, and J. Jelonnek, "On the dependence of the efficiency of a 240 GHz high-power gyrotron on the displacement of the electron beam and on the azimuthal index", *Phys. of Plasmas* vol. 21, no. 1, 013104, January 2014. https://doi.org/10.1063/1.4862446

70. A. Malygin, S. Illy, I. Pagonakis, B. Piosczyk, S. Kern, J. Weggen, M. Thumm, J. Jelonnek, K. Avramides, L. Ives, D. Marsden, G. Collins, "Design and 3-D simulations of a 10-kW/28-GHz gyrotron with a segmented emitter based on controlled porosity-reservoir cathodes", *IEEE Trans. Plasma Sci*. vol. 41, no. 10, pp. 2717-2723, October 2013. https://doi.org/10.1109/TPS.2013.2255069

71. J. Jelonnek, S. Alberti, K. A. Avramidis, V. Erckmann, G. Gantenbein, K. Hesch, J.-P. Hogge, S. Illy, J. Jin, S. Kern, I. Pagonakis, B. Piosczyk, T. Rzesnicki, A. Samartsev, M. Thumm, and the W7-X teams and EGYC teams at KIT, EPFL-CRPP, HELLAS, IPF Stuttgart, IPF-CNR and IPP Greifswald, "Development of advanced gyrotrons in Europe", *Fusion Sci. & Techn*, vol. 64, no. 3, pp 505-512, September 2013. https://doi.org/10.13182/FST13-A19143

72. S. Alberti, J-Ph. Ansermet, K. A. Avramides, F. Braunmueller, P. Cuanillon, J. Dubray, D. Fasel1, J-Ph.Hogge, A. Macor, E. de Rijk2, M. da Silva, M. Q. Tran, T. M.Tran1, and Q. Vuillemin, "Experimental study from linear to chaotic regimes on a THz-frequency gyrotron oscillator", *Phys. Plasmas* vol 19, 123102, December 2012. https://doi.org/10.1063/1.4769033

73. Z. C. Ioannidis, K. A. Avramides, G. P. Latsas, and I. G. Tigelis, "Azimuthal mode coupling in coaxial waveguides and cavities with longitudinally corrugated insert", *IEEE Trans. Plasma Sci*. vol. 39, no. 5, pp. 1213-1221, May 2011. https://doi.org/10.1109/TPS.2011.2118766

74. G. P. Latsas, J. L. Vomvoridis, K. A. Avramides, and I. G. Tigelis, "Beam–wave interaction in corrugated structures in the small-signal regime", *IEEE Trans. Plasma Sci*. vol. 37, no. 10, pp. 2020-2030, October 2009. https://doi.org/10.1109/TPS.2009.2029107

75. J.-P. Hogge, T. P. Goodman, S. Alberti, F. Albajar, K. A. Avramides, P. Benin, S. Bethuys, W. Bin, T. Bonicelli, A. Bruschi, S. Cirant, E. Droz, O. Dumbrajs, D. Fasel, F. Gandini, G. Gantenbein, S. Illy, S. Jawla, J. Jin, S. Kern, P. Lavanchy, C. Liévin, B. Marlétaz, P. Marmillod, A. Perez, B. Piosczyk, I. Pagonakis, L. Porte, T. Rzesnicki, U. Siravo, M. Thumm, and M.Q. Tran, "First experimental results from the EU 2MW coaxial cavity ITER gyrotron prototype", *Fusion Sci. & Techn.*, vol. 55, no. 2, pp. 204-212, February 2009. https://doi.org/10.13182/FST09-A4072

76. I. Gr. Pagonakis, J.-P. Hogge, S. Alberti, K. A. Avramides, and J. L. Vomvoridis, "A new concept for the collection of an electron beam configured by an externally applied magnetic field", *IEEE Trans. Plasma Sci*. vol. 36, no. 2, pp. 469-480, April 2008. https://doi.org/10.1109/TPS.2008.917943

77. O. Dumbrajs, Y. Kominis, K. A. Avramides, K. Hizanidis, and J. L. Vomvoridis, "Hamiltonian map description of electron dynamics in gyrotrons", *IEEE Trans. Plasma Sci*., vol. 34, no. 3, pp. 673-680, June 2006. https://doi.org/10.1109/TPS.2006.875763

78. Y. Kominis, O. Dumbrajs, K. A. Avramides, K. Hizanidis, and J. L. Vomvoridis, "Canonical perturbation theory for complex electron dynamics in gyrotron resonators", *Physics of Plasmas*, vol. 12, No. 11, art. no. 113102, November 2005. https://doi.org/10.1063/1.2125547

79. Y. Kominis, O. Dumbrajs, K. A. Avramides, K. Hizanidis, and J. L. Vomvoridis, "Chaotic electron dynamics in gyrotron resonators", *Physics of Plasmas*, vol. 12, No. 4, art. no. 043104, April 2005. https://doi.org/10.1063/1.1867496

80. K. A. Avramides, C. T. Iatrou, and J. L. Vomvoridis, "Design considerations for powerful continuous-wave second-cyclotron-harmonic coaxial-cavity gyrotrons", *IEEE Trans. Plasma Sci*., vol. 32, no. 3, pp. 917-928, June 2004. https://doi.org/10.1109/TPS.2004.828781

Άρθρα σε Διεθνή Επιστημονικά Συνέδρια με Πρακτικά

1. P. Brücker, K. A. Avramidis, A. Marek, M. Thumm, and J. Jelonnek, "Theoretical investigation on injection locking of the EU 170 GHz 2 MW $TE_{34,19}$-mode coaxial-cavity gyrotron", *46th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2021)*, 29 August – 3 September 2021, Chengdu, China. https://doi.org/10.1109/IRMMW-THz50926.2021.9567563

2. L. Krier, K. A. Avramidis, H. Braune, G. Gantenbein, S. Illy, Z. Ioannidis, J. Jelonnek, H. P. Laqua, S. Marsen, D. Moseev, F. Noke, I. Gr. Pagonakis, T. Ruess, T. Rzesnicki, T. Stange, M. Thumm, and R. C. Wolf, "Frequency stabilization of Megawatt-class 140 GHz gyrotrons at W7-X using an off-the-shelf PLL system", *46th International Conference on Infrared, Millimeter, and Terahertz Waves (IRMMW-THz 2021)*, 29 August – 3 September 2021, Chengdu, China. https://doi.org/10.1109/IRMMW-THz50926.2021.9566847

3. A. Leggieri, D. Bariou, V. Hermann, F. Legrand, G. Lietaer, C. Lievin, R. Marchesin, P. Thouvenin, F. Albajar, F. Sanchez, K. A. Avramidis, G. Gantenbein, S. Illy, Z. Ioannidis, J. Jelonnek, J. Jin, I. Gr. Pagonakis, T. Rzesnicki, M. Thumm A. Allio, R. Difonzo, L. Savoldi, S. Alberti, J.-P. Hogge, I. Chelis, I. Tigelis, G. Latsas, W. Bin, A. Bruschi, F. Fanale, "TH1509U European 170 GHz 1 MW CW industrial gyrotron upgrade", *22nd International Vacuum Electronics Conference (IVEC 2021)*, 27-30 April 2021, *Virtual event*. https://doi.org/10.1109/IVEC51707.2021.9722467

4. T. Ruess, K. A. Avramidis, G. Gantenbein, Z. Ioannidis, S. Illy, J. Jin, I. Gr. Pagonakis, T. Rzesnicki, M. Thumm, J. Weggen, and J. Jelonnek, "Performance expectation and preparation of the first experimental campaign of the KIT 2 MW 170/204 GHz coaxial-cavity gyrotron", *22nd International Vacuum Electronics Conference (IVEC 2021)*, 27-30 April 2021, *Virtual event*. https://doi.org/10.1109/IVEC51707.2021.9722448

5. G. Gantenbein, K. Avramidis, I. Chelis, B. Ell, S. Illy, Z. C. Ioannidis, J. Jelonnek, J. Jin, H.P. Laqua, S. Marsen, I. G. Pagonakis, T. Ruess, T. Rzesnicki, S. Stanculovic, M. Thumm, I. Tigelis, "High power gyrotron development for advanced fusion devices", *28th IAEA Fusion Energy Conference (FEC 2020)*, 10-15 May 2021, *virtual event*. https://conferences.iaea.org/event/214/contributions/17576/

6. Z. C. Ioannidis, T. Rzesnicki, K. A. Avramidis, G. Gantenbein, S. Illy, J. Jin, L. Krier, I. Gr. Pagonakis, S. Ruess, M. Schmid, M. Thumm, and J. Jelonnek, "Operation of the modular KIT 170 GHz - 2 MW longer-pulse coaxial-cavity gyrotron with pulses up to 50 ms", *45th International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2020)*, 8-13 November 2020, *virtual event.* https://doi.org/10.1109/IRMMW-THz46771.2020.9370698

7. T. Ruess, K. A. Avramidis, G. Gantenbein, S. Illy, T. Rzesnicki, M. Thumm, and J. Jelonnek, "Theoretical study on the possibility for stepwise tuning of the frequency of the KIT 2 MW 170/204 GHz coaxial-cavity gyrotron", *45th International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2020)*, 8-13 November 2020, *virtual event.* https://doi.org/10.1109/IRMMW-THz46771.2020.9370801

8. S. Illy, K. A. Avramidis, Z. C. Ioannidis, G. Aiello, P. Bénin, I. Chelis, A. Dinklage, G. Gantenbein, J. Jelonnek, J. Jin, H. P. Laqua, A. Leggieri, F. Legrand, A. Marek, S. Marsen, I. Gr. Pagonakis, T. Ruess, T. Rzesnicki, T. Scherer, D. Strauss, M. Thumm, I. Tigelis, D. Wagner, J. Weggen, R. C. Wolf, and the Wendelstein 7-X Team, "Recent development of a 1.5 MW, 140 GHz continuous-wave gyrotron for the upgraded ECRH system at W7-X", *45th International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2020)*, 8-13 November 2020, *virtual event.* https://doi.org/10.1109/IRMMW-THz46771.2020.9370666

9. M. Yu. Glyavin, A. I. Tsvetkov, I. Gr. Pagonakis, J. Jelonnek, K. A. Avramidis, S. Mitsudo, "The project of a 2nd harmonic 0.78 THz gyrotron with a coaxial cavity", *4th International Conference on Terahertz and Microwave Radiation: Generation, Detection and Applications (TERA 2020)*, 24 – 26 August 2020, Tomsk, Russia (on-line conference), Conference Proceedings, SPIE Digital Library, Proceedings Volume 11582 (**peer reviewed**). https://doi.org/10.1117/12.2580564

10. A. Marek, K. A. Avramidis, N. S. Ginzburg, D. Haas, S. Illy, J. Jin, M. Thumm, and J. Jelonnek, "Simple feedback system for passive mode locked gyro-devices at 263 GHz", *13th German Microwave Conference 2020* (*GeMiC 2020*), 9–11 March 2020, Cottbus, Germany, proc. pp. 56-59 (**peer reviewed**). https://ieeexplore.ieee.org/document/9080174

11. *K. A. Avramidis, G. Aiello, P. T. Brücker, B. Ell, T. Franke, G. Gantenbein, G. Grossetti, S. Illy, Z. C. Ioannidis, J. Jin, P. C. Kalaria, A. Marek, I. Gr. Pagonakis, S. Ruess, T. Ruess, T. Rzesnicki, T. Scherer, M. Schmid, D. Strauss, M. Thumm, M. Q. Tran, C. Wu, and J. Jelonnek, "DEMO-relevant gyrotron research at KIT", *44th International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2019)*, 1 - 6 September 2019, Paris, France. https://doi.org/10.1109/IRMMW-THz.2019.8873771

12. S. Illy, K. A. Avramidis, P. T. Brücker, G. Gantenbein, P. C. Kalaria, S. Ruess, M. Thumm, and J. Jelonnek, "Investigation of a mini-channel cavity cooling concept for a 170 GHz, 2 MW coaxial-cavity Gyrotron", *44th International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2019)*, 1 - 6 September 2019, Paris, France. https://doi.org/10.1109/IRMMW-THz.2019.8874446

13. A. Leggieri, S. Alberti, K. A. Avramidis, G. Gantenbein, J.-P. Hogge, S. Illy, J. Jelonnek, J. Jin, H. Laqua, F. Legrand, R. Marchesin, I. Gr. Pagonakis, P. Thouvenin, M. Thumm, R. Wolf, "THALES TH1507 140 GHz 1 MW CW gyrotron for W7-X stellarator", *44th International*

Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2019), 1 - 6 September 2019, Paris, France. https://doi.org/10.1109/IRMMW-THz.2019.8874589

14. S. Alberti, K. A. Avramidis, W. Bin, A. Bertinetti, J. Dubray, D. Fasel, S. Garavaglia, J. Genoud, T. Goodman, J. P. Hogge, P.-F. Isoz, P. Lavanchy, F. Legrand, B. Marlétaz, J. Masur, A. Moro, I. Gr. Pagonakis, M. Silva, M. Toussaint, U. Siravo, "High-efficiency, long-pulse operation of MW-level dual-frequency gyrotron, 84/126GHz, for the TCV Tokamak", *44th International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2019)*, 1 - 6 September 2019, Paris, France. https://doi.org/10.1109/IRMMW-THz.2019.8874423
15. T. Ruess, K. A. Avramidis, G. Gantenbein, Z. Ioannidis, S. Illy, J. Jin, F. C. Lutz, I. Gr. Pagonakis, S. Ruess, T. Rzesnicki, M. Thumm, D. Wagner, and J. Jelonnek, "Operating the KIT 170 GHz 2 MW coaxial-cavity gyrotron at 204 GHz: Performance expectations and first cold test of the quasi-optical system", *20th International Vacuum Electronics Conference (IVEC 2019)*, 28 April - 1 May 2019, Busan, South Korea.
https://doi.org/10.1109/IVEC.2019.8745094
16. P. C. Kalaria, P. T Brücker, S. Ruess, S. Illy, K. A. Avramidis, G. Gantenbein, M. Thumm, and J. Jelonnek, "Design studies of mini-channel cavity cooling for a 170 GHz, 2 MW coaxial-cavity gyrotron", *20th International Vacuum Electronics Conference (IVEC 2019)*, 28 April -1 May 2019, Busan, South Korea. https://doi.org/10.1109/IVEC.2019.8745135
17. J. Jelonnek, G. Aiello, F. Albajar, S. Alberti, K. A. Avramidis, A. Bertinetti, P. T. Brücker, A. Bruschi, I. Chelis, J. Dubray, F. Fanale, D. Fasel, T. Franke, G. Gantenbein, S. Garavaglia, J. Genoud, G. Granucci, J.-P. Hogge, S. Illy, Z. C. Ioannidis, J. Jin, H. Laqua, G. P. Latsas, A. Leggieri, F. Legrand, R. Marchesin, A. Marek, B. Marlétaz, M. Obermaier, I. Gr. Pagonakis, D. V. Peponis, S. Ruess, T. Ruess, T. Rzesnicki, P. Sanchez, L. Savoldi, T. Scherer, D. Strauss, P. Thouvenin, M. Thumm, I. Tigelis, M.-Q. Tran, F. Wilde, C. Wu, A. Zisis, "From W7-X towards ITER and beyond: 2019 Status on EU fusion gyrotron developments", *20th International Vacuum Electronics Conference (IVEC 2019)*, 28 April -1 May 2019, Busan, South Korea. https://doi.org/10.1109/IVEC.2019.8744989
18. R. Marchesin, S. Alberti, K. A. Avramidis, A. Bertinetti, J. Dubray, D. Fasel, G. Gantenbein, J. Genoud, J.-P. Hogge, S. Illy, J. Jelonnek, J. Jin, A. Leggieri, F. Legrand, B. Marlétaz, I. Gr. Pagonakis, L. Savoldi, P. Thouvenin, M. Thumm, M.-Q. Tran, "Manufacturing and test of the 1 MW Long-Pulse 84/126 GHz dual-frequency gyrotron for TCV", *20th International Vacuum Electronics Conference (IVEC 2019)*, 28 April -1 May 2019, Busan, South Korea. https://doi.org/10.1109/IVEC.2019.8745147
19. T. Ruess, K. A. Avramidis, G. Gantenbein, Z. Ioannidis, S. Illy, J. Jin, F.-C. Lutz, A. Marek, S. Ruess, T. Rzesnicki, M. Thumm, D. Wagner, J. Weggen, and J. Jelonnek, "Automated generation of high-order modes for tests of quasi-optical systems of gyrotrons for W7-X stellarator", *12th German Microwave Conference 2019 (GeMic 2019)*, 25–27 March 2019, Stuttgart, Germany, Conference Proceedings, pp-226-228 (**peer reviewed**).
https://doi.org/10.23919/GEMIC.2019.8698142
20. G. Gantenbein, F. Albajar, S. Alberti, K. Avramidis, W. Bin, T. Bonicelli, A. Bruschi, J. Chelis, F. Fanale, F. Legrand, V. Hermann, J.-P. Hogge, S. Illy, Z. C. Ioannidis, J. Jin, J. Jelonnek, W. Kasparek, G. P. Latsas, C. Lechte, M. Lontano, I. G. Pagonakis, T. Rzesnicki, C. Schlatter, M. Schmid, I. G. Tigelis, M. Thumm, M. Q. Tran, A. Zein, A. Zisis, "Recent progress in the development of the European 1 MW, 170 GHz CW gyrotron for ITER", *27th IAEA Fusion Energy Conference (FEC 2018)*, 22 – 27 October 2018, Gandhinagar, India, Conference Proceedings, IAEA-CN-123/45, preprint 0192.
https://nucleus.iaea.org/sites/fusionportal/Shared%20Documents/FEC%202018/fec2018-preprints/preprint0192.pdf

21. L. Savoldi, F. Albajar, S. Alberti, K. A. Avramidis, A. Bertinetti, F. Cau, F. Cismondi, G. Gantenbein, J. P. Hogge, Z. C. Ioannidis, P.Kalaria, A. Leggieri, F. Legrand, I. Gr. Pagonakis, S. Ruess, T. Rzesnicki, and R. Zanino, "Assessment and optimization of the cavity thermal performance for the European continuous wave gyrotrons", *27th IAEA Fusion Energy Conference (FEC 2018)*, 22 – 27 October 2018, Gandhinagar, India, Conference Proceedings, IAEA-CN-258, preprint 0365. https://nucleus.iaea.org/sites/fusionportal/Shared%20Documents/FEC%202018/fec2018-preprints/preprint0365.pdf

22. T. Ruess, K. A. Avramidis, M. Fuchs, G. Gantenbein, S. Illy, F.-C. Lutz, A. Marek, S. Ruess, T. Rzesnicki, M. Thumm, D. Wagner, J. Weggen, and J. Jelonnek, "Towards fully automated systems for the generation of very high order modes in oversized waveguides", *3rd International Conference on Terahertz and Microwave Radiation: Generation, Detection and Applications (TERA 2018)*, 22-25 October 2018, Nizhny Novgorod, Russia, EPJ Web of Conferences, vol. 195, 01030, 2018. https://doi.org/10.1051/epjconf/201819501030

23. I. Gr. Pagonakis, C. Wu, B. Ell, K. A. Avramidis, G. Gantenbein, S. Illy, M. Thumm, and J. Jelonnek, "Progress in the development of a multistage depressed collector system for high power gyrotrons", *43rd International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2018)*, 9 -14 September 2018, Nagoya, Japan. https://doi.org/10.1109/IRMMW-THz.2018.8509991

24. I. Gr. Pagonakis, K. A. Avramidis, G. Gantenbein, S. Illy, F. Legrand, S. Ruess, T. Ruess, T. Rzesnicki, M. Thumm, and J. Jelonnek, "Magnetron injection gun for the 2 MW 170 GHz modular coaxial cavity gyrotron", *43rd International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2018)*, 9 -14 September 2018, Nagoya, Japan. https://doi.org/10.1109/IRMMW-THz.2018.8510454

25. *K. A. Avramidis, G. Aiello, P. T. Brücker, T. Franke, G. Gantenbein, M. George, G. Grossetti, S. Illy, Z. C. Ioannidis, J. Jin, P. C. Kalaria, A. Marek, I. Gr. Pagonakis, S. Ruess, T. Ruess, T. Rzesnicki, T. Scherer, M. Schmid, D. Strauss, M. Thumm, M. Q. Tran, C. Wu, A. Zein, and J. Jelonnek, "Overview of recent gyrotron R&D at KIT in view of the EU DEMO", *43rd International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2018)*, 9 -14 September 2018, Nagoya, Japan. https://doi.org/10.1109/IRMMW-THz.2018.8510364

26. T. Rzesnicki, K. A. Avramidis, G. Gantenbein, S. Illy, Z. C. Ioannidis, J. Jin, I. Gr. Pagonakis, S. Ruess, T. Ruess, M. Schmid, M. Thumm, J. Weggen, and J. Jelonnek, "Development and first operation of the 170 GHz, 2 MW longer-pulse coaxial-cavity modular gyrotron prototype at KIT", *43rd International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2018)*, 9 -14 September 2018, Nagoya, Japan. https://doi.org/10.1109/IRMMW-THz.2018.8510151

27. S. Illy, K. A. Avramidis, L. Jackowski, W. Kdous, and J. Jelonnek, "Optimized vertical collector sweeping for high power CW gyrotrons using advanced current waveforms", *43rd International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2018)*, 9 -14 September 2018, Nagoya, Japan. https://doi.org/10.1109/IRMMW-THz.2018.8509998

28. P. C. Kalaria, K. A. Avramidis, G. Gantenbein, S. Illy, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "Influence of electron beam misalignment on the performance of a 0.24 THz, 1.5 MW hollow-cavity gyrotron design for DEMO", *43rd International Conference on Infrared, Millimeter and Terahertz Waves (IRMMW THz-2018)*, 9 -14 September 2018, Nagoya, Japan. https://doi.org/10.1109/IRMMW-THz.2018.8510146

29. J. Jelonnek, G. Aiello, K. Avramidis, G. Gantenbein, G. Grossetti, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, A. Marek, I. Gr. Pagonakis, T. Rzesnicki, S. Ruess, T. Ruess, T. Scherer, M. Schmid, D. Strauss, M. Thumm, F. Wilde, C. Wu, A. Zein, "2018 status on KIT gyrotron activities", *30th Joint Russian-German Meeting on ECRH and Gyrotrons*, 17-24 June 2018, Nizhny Novgorod,

Russia, *EPJ Web of Conferences*, vol. 187, 01009, 2018. https://doi.org/10.1051/epjconf/201818701009

30. A. Marek, K. A. Avramidis, S. M. Copplestone, N. S. Ginzburg, S. Illy, J. Jelonnek, J. Jin, S. V. Mishakin, P. Ortwein, and M. Thumm, "Contributions to the joint DFG-RSF project - Generation of ultra-short microwave pulses -", *30th Joint Russian-German Meeting on ECRH and Gyrotrons*, 17-24 June 2018, Nizhny Novgorod, Russia, *EPJ Web of Conferences*, vol. 187, 01027, 2018. https://doi.org/10.1051/epjconf/201818701027
31. S. Ruess, K. A. Avramidis, G. Gantenbein, Z. Ioannidis, S. Illy, P. C. Kalaria, T. Kobarg, I. Gr. Pagonakis, T. Ruess, T. Rzesnicki, M. Thumm, J. Weggen, and J. Jelonnek, "Current status of the KIT coaxial-cavity long-pulse gyrotron and its key components", *30th Joint Russian-German Meeting on ECRH and Gyrotrons*, 17-24 June 2018, Nizhny Novgorod, Russia, *EPJ Web of Conferences*, vol. 187, 01028, 2018. https://doi.org/10.1051/epjconf/201818701028
32. T. Ruess, K. A. Avramidis, M. Fuchs, G. Gantenbein, S. Illy, Z. Ioannidis, F. C. Lutz, S. Ruess, T. Rzesnicki, M. Thumm, D. Wagner, J. Weggen, and J. Jelonnek, "2018 status of the measurement capabilities for fusion gyrotrons at KIT/IHM", *30th Joint Russian-German Meeting on ECRH and Gyrotrons*, 17-24 June 2018, Nizhny Novgorod, Russia, *EPJ Web of Conferences*, vol. 187, 01019, 2018. https://doi.org/10.1051/epjconf/201818701019
33. F. Sanchez, F. Albajar, A. Lo Bue, S. Alberti, K. Avramidis,T. Bonicelli1, A. Bruschi, G. Gantenbein, J.-P. Hogge, S. Illy, Z. Ioannidis, A. Leggieri, F. Legrand, I. Pagonakis, E. Perial, T. Rzesnicki, M. Thumm, and I. Tigelis, "Metrology techniques for the verification of the alignment of the EU gyrotron prototype for ITER", *20th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating (EC – 20)*, 14-17 May 2018, Greifswald, Germany, EPJ Web of Conferences, vol. 203, p. 04015, March 2019 (**peer reviewed**). https://doi.org/10.1051/epjconf/201920304015
34. *K. A. Avramidis, T. Ruess, F. Mentgen, J. Jin, D. Wagner, G. Gantenbein, S. Illy, Z. C. Ioannidis, H. P. Laqua, I. Gr. Pagonakis, T. Rzesnicki, M. Thumm, R. C. Wolf, and J. Jelonnek, "Studies towards an upgraded 1.5 MW gyrotron for W7-X", *20th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating (EC – 20)*, 14-17 May 2018, Greifswald, Germany, *EPJ Web of Conferences*, vol. 203, p. 04003, March 2019, (**peer reviewed**). https://doi.org/10.1051/epjconf/201920304003
35. J. Jelonnek, G. Aiello, S. Alberti, K. Avramidis, A. Bruschi, J. Chelis, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, G. Grossetti, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, G. P. Latsas, I. Gr. Pagonakis, D. V. Peponis, T. Rzesnicki, S. Ruess, T. Ruess, T. Scherer, M. Schmid, D. Strauss, C. Wu, M. Thumm, I. Tigelis, M. Q. Tran, F. Wilde, A. Zein, "Towards advanced fusion gyrotrons: 2018 update on activities within EUROfusion", *20th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating (EC – 20)*, 14-17 May 2018, Greifswald, Germany, *EPJ Web of Conferences*, vol. 203, p. 04007, March 2019, (**peer reviewed**). https://doi.org/10.1051/epjconf/201920304007
36. I. Gr. Pagonakis, S. Alberti, K. A. Avramidis, G. Gantenbein, J. Genoud, J.P. Hogge, S. Illy, Z. Ioannidis, P. Kalaria, B. Piosczyk, S. Ruess, T. Ruess, T. Rzesnicki, M. Thumm, I. L. Vomvoridis, and J. Jelonnek, "Overview on recent progress in magnetron injection gun theory and design for high power gyrotrons", *20th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating (EC – 20)*, 14-17 May 2018, Greifswald, Germany, *EPJ Web of Conferences*, vol. 203, p. 04011, March 2019, (**peer reviewed**). https://doi.org/10.1051/epjconf/201920304011
37. S. Illy, K. A. Avramidis, G. Gantenbein, Z. Ioannidis, J. Jin, P. C. Kalaria, I. Gr. Pagonakis, S. Ruess, T. Ruess, T. Rzesnicki, M. Thumm, and J. Jelonnek, "Recent status and future prospects of coaxial cavity gyrotron development at KIT", *20th Joint Workshop on Electron Cyclotron*

Emission and Electron Cyclotron Resonance Heating (EC – 20), 14-17 May 2018, Greifswald, Germany, *EPJ Web of Conferences* vol. 203, p. 04005, March 2019, (**peer reviewed**). https://doi.org/10.1051/epjconf/201920304005

38. T. Ruess, K. A. Avramidis, G. Gantenbein, S. Illy, Z. Ioannidis, J. Jin, P. Kalaria, I. Gr. Pagonakis, S. Ruess, T. Rzesnicki, M. Thumm, and J. Jelonnek, "Theoretical study on the operation of the EU/KIT $TE_{34,19}$-mode coaxial-cavity gyrotron at 170/204/238 GHz", *20th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating (EC – 20)*, 14-17 May 2018, Greifswald, Germany, *EPJ Web of Conferences*, vol. 203, p. 04014, March 2019, (**peer reviewed**). https://doi.org/10.1051/epjconf/201920304014
39. Z. C. Ioannidis, T. Rzesnicki, F. Albajar, S. Alberti, K. A. Avramidis, W. Bin, T. Bonicelli, A. Bruschi, J. Chelis, F. Fanale, G. Gantenbein, V. Hermann, J.-P. Hogge, S. Illy, J. Jin, J. Jelonnek, W. Kasparek, G. Latsas, C. Lechte, F. Legrand, I. Gr. Pagonakis, F. Sánchez, M. Schmid, C. Schlatter, M. Thumm, I. G. Tigelis, M. Q. Tran, A. Zein, A. Zisis, "Report of recent experiments with the European 1 MW, 170 GHz CW and SP prototype gyrotrons for ITER", *20th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating (EC – 20)*, 14-17 May 2018, Greifswald, Germany, *EPJ Web of Conferences*, vol. 203, p. 04006, March 2019, (**peer reviewed**). https://doi.org/10.1051/epjconf/201920304006
40. P. C. Kalaria, M. George, S. Illy, K. A. Avramidis, G. Gantenbein, S. Ruess, T. Rzesnicki, M. Thumm, and J. Jelonnek, "Performance analysis of an insert cooling system for long-pulse operation of a coaxial-cavity gyrotron", *19th International Vacuum Electronics Conference (IVEC 2018)*, 24-26 April 2018, Monterey, CA, USA. https://doi.org/10.1109/IVEC.2018.8391556
41. P. C. Kalaria, K. A. Avramidis, G. Gantenbein, S. Illy, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "Mode competition control using triode-type start-up scenario for a 236 GHz gyrotron for DEMO", *German Microwave Conference (GeMiC 2018)*, 12 – 14 March 2018, Freiburg, Germany, Conference Proceedings, pp. 287-290 (**peer reviewed**). https://doi.org/10.23919/GEMIC.2018.8335086
42. A. Marek, K. A. Avramidis, N. S. Ginzburg, S. Illy, J. Jelonnek, J. Jin, S. V. Mishakin, and M. Thumm, "Benefits of advanced full-wave vector analysis codes for the design of high-power microwave tubes", *German Microwave Conference (GeMiC 2018)*, 12 – 14 March 2018, Freiburg, Germany, Conference Proceedings, pp. 279-282 (**peer reviewed**). https://doi.org/10.23919/GEMIC.2018.8335084
43. S. Ruess, K. A. Avramidis, G. Gantenbein, Z. Ioannidis, S. Illy, P. C. Kalaria, T. Kobarg, I. Gr. Pagonakis, T. Ruess, T. Rzesnicki, M. Thumm, J. Weggen, and J. Jelonnek, "KIT in-house manufacturing and first operation of a 170 GHz 2 MW longer-pulse coaxial-cavity pre-prototype gyrotron", *German Microwave Conference (GeMiC 2018)*, 12 – 14 March 2018, Freiburg, Germany, Conference Proceedings, pp. 291 – 294 (**peer reviewed**). https://doi.org/10.23919/GEMIC.2018.8335087
44. T. Ruess, K. A. Avramidis, G. Gantenbein, S. Illy, Z. Ioannidis, P. Kalaria, M. Obermaier, I. Gr. Pagonakis, S. Ruess, T. Rzesnicki, M. Thumm, and J. Jelonnek, "Considerations on the selection of operating modes for future coaxial-cavity gyrotrons for DEMO", *German Microwave Conference (GeMiC 2018)*, 12 – 14 March 2018, Freiburg, Germany, Conference Proceedings, pp. 283 – 286 (**peer reviewed**). https://doi.org/10.23919/GEMIC.2018.8335085
45. S. Ruess, K. A. Avramidis, M. Fuchs, G. Gantenbein, S. Illy, P. C. Kalaria, T. Kobarg, I. Gr. Pagonakis, T. Rzesnicki, M. Thumm, J. Weggen, and J. Jelonnek, "KIT coaxial gyrotron development: From ITER towards DEMO", *47th European Microwave Conference*, 8 - 12 October 2017, Nuremberg, Germany, Conference proceedings pp. 860-863. https://doi.org/10.23919/EuMC.2017.8230980

46. J. Jelonnek, G. Aiello, K. Avramidis, G. Gantenbein, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, A. Marek, I. G. Pagonakis, T. Rzesnicki, S. Ruess, T. Ruess, T. Scherer, M. Schmid, D. Strauss, M. Thumm, F. Wilde, C. Wu, A. Zein "Developments of Fusion gyrotrons for W7-X, ITER and EU DEMO: Ongoing activities and future plans of KIT", *42nd Int. Conf. Infrared Millimeter THz Waves,* 27 August - 1 September 2017, Cancun, Mexico. https://doi.org/10.1109/IRMMW-THz.2017.8067248

47. I. Gr. Pagonakis, C. Wu, K. A. Avramidis, G. Gentenbein, S. Illy, M. Thumm, and J. Jelonnek, "Overview of recent theoretical studies on E×B multistage depressed collector designs for gyrotrons", *42nd Int. Conf. Infrared Millimeter THz Waves,* 27 August - 1 September 2017, Cancun, Mexico. https://doi.org/10.1109/IRMMW-THz.2017.8066854

48. G. Aiello, T. A. Scherer, D. Strauss, K. Avramidis, J. Jelonnek, T. Franke, M. Q. Tran, "Cooling concepts for the CVD diamond Brewster window", *42nd Int. Conf. Infrared Millimeter THz Waves,* 27 August - 1 September 2017, Cancun, Mexico. https://doi.org/10.1109/IRMMW-THz.2017.8067059

49. T. Rzesnicki, Z. C. Ioannidis, K. A. Avramidis , G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, T. Kobarg, I. Gr. Pagonakis, M. Schmid, M. Thumm, "Experimental study on further performance optimization of the European 1 MW, 170 GHz gyrotron prototype for ITER", *42nd Int. Conf. Infrared Millimeter THz Waves,* 27 August - 1 September 2017, Cancun, Mexico. https://doi.org/10.1109/IRMMW-THz.2017.8067252

50. G. Granucci, G. Aiello, K. A. Avramidis, A. Bruschi, G. Gantenbein, S. Garavaglia, G. Grossetti, J. Jelonnek, A. Moro, E. Poli, N. Rispoli, D. Strauss, M. Thumm, I. Tigelis, C.Tsironis, T. Franke, and M. Q. Tran, "The EC-system of EU DEMO: concepts for a reactor heating system", *10th Int. Workshop on Strong microwaves and Terahertz waves: Sources and applications*, 17 - 22 July 2017, Nizhny Novgorod - Moscow, Russia, *EPJ Web of Conferences* vol. 149, 03003, August 2017. https://doi.org/10.1051/epjconf/201714903003

51. A. Marek, K. A. Avramidis, S. Copplestone, N. S. Ginzburg, S. Illy, J. Jelonnek, J. Jin, S. V. Mishakin, A.-S. Müller, P. Ortwein, M. Thumm, "Simulation of electromagnetic fields scattered from arbitrary shaped electric conductors", *10th Int. Workshop on Strong microwaves and Terahertz waves: Sources and applications*, 17 - 22 July 2017, Nizhny Novgorod - Moscow, Russia, *EPJ Web of Conferences* vol. 149, 04016, August 2017. https://doi.org/10.1051/epjconf/201714904016

52. S. Copplestone, P. Ortwein, C.-D. Munz, K. A. Avramidis, J. Jelonnek, "Simulation of gyrotrons using the high-order particle-in-cell code PICLas", *10th Int. Workshop on Strong microwaves and Terahertz waves: Sources and applications*, 17 - 22 July 2017, Nizhny Novgorod - Moscow, Russia, *EPJ Web of Conferences* vol. 149, 04019, August 2017. https://doi.org/10.1051/epjconf/201714904019

53. J. Jelonnek, G. Aiello, S. Alberti, K. Avramidis, A. Bertinetti, A. Bruschi, J. Chelis, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, G. Grossetti, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, G. P. Latsas, H. Laqua, A. Leggieri, F. Legrand, A. Marek, I. Gr. Pagonakis, D. Peponis, L. Savoldi, T. Rzesnicki, S. Ruess, T. Ruess, T. Scherer, M. Schmid, D. Strauss, I. Tigelis, M. Thumm, M. Q. Tran, F. Wilde, C. Wu, R. Zanino, A. Zein "European research activities towards a future DEMO gyrotron", *10th Int. Workshop on Strong microwaves and Terahertz waves: Sources and applications*, 17 - 22 July 2017, Nizhny Novgorod - Moscow, Russia, *EPJ Web of Conferences* vol. 149, 04007, August 2017. https://doi.org/10.1051/epjconf/201714904007

54. S. Alberti, J. Genoud, T. Goodman, J.-P. Hogge, L. Porte, M. Silva, T.-M. Tran, M.-Q. Tran, K. Avramidis, I. Pagonakis, J. Jin, S. Illy, G. Gantenbein, J. Jelonnek, M. Thumm, W. Bin, A. Bruschi, S. Garavaglia, A. Moro, W. Kasparek, F. Legrand, E. Perial, Y. Rozier, F. Cismondi, N. Doelman, "Recent progress in the upgrade of the TCV EC-system with two 1MW/2s dual-

frequency (84/126GHz) gyrotrons" *22nd Topical Conference on Radiofrequency Power in Plasmas*, 30 May - 2 June 2017, Aix en Provence, France, *EPJ Web of Conferences* vol. 157, 03001, October 2017. https://doi.org/10.1051/epjconf/201715703001

55. G. Gantenbein, K. Avramidis, J. Franck, S. Illy, Z. C. Ioannidis, J. Jin, J. Jelonnek, P. Kalaria, I. Gr. Pagonakis, S. Ruess, T. Rzesnicki, M. Thumm, C. Wu, "Recent trends in fusion gyrotron development at KIT" *22nd Topical Conference on Radiofrequency Power in Plasmas*, 30 May - 2 June 2017, Aix en Provence, France, *EPJ Web of Conferences* vol. 157, 03017, October 2017. https://doi.org/10.1051/epjconf/201715703017
56. G. Gantenbein, F. Albajar, S. Alberti, K. Avramidis, W. Bin, T. Bonicelli, A. Bruschi, J. Chelis, F. Fanale, F. Legrand, V. Hermann, J.-P. Hogge, S. Illy, Z. C. Ioannidis, J. Jin, J. Jelonnek, W. Kasparek, G. P. Latsas, C. Lechte, M. Lontano, I. G. Pagonakis, T. Rzesnicki, C. Schlatter, M. Schmid, I. G. Tigelis, M. Thumm, M. Q. Tran, J. L. Vomvoridis, A. Zein, A. Zisis, "Experimental results of the EU ITER prototype gyrotrons" *22nd Topical Conference on Radiofrequency Power in Plasmas*, 30 May - 2 June 2017, Aix en Provence, France, *EPJ Web of Conferences* vol. 157, 03016, October 2017. https://doi.org/10.1051/epjconf/201715703016
57. S. Garavaglia, G. Aiello, S. Alberti, K. Avramidis, A. Bruschi, I. G. Chelis, J. Franck, G. Gantenbein, G. Granucci, G. Grossetti, K. Hizanidis, S. Illy, J. Jelonnek, P. Kalaria, A. Moro, I. Pagonakis, D. V. Peponis, E. Poli, N. Rispoli, T. Rzesnicki, S. Ruess, T. Scherer, D. Strauss, I. Tigelis, C. Tsironis, C. Wu, T. Franke, and M.-Q. Tran, "EU DEMO EC system preliminary conceptual design", *13th International Symposium on Fusion Nuclear Technology* (*ISFNT 2017*), 25-29 September 2017, Kyoto, Japan. http://www.euro-fusionscipub.org/wp-content/uploads/eurofusion/WPHCDCPR17_17463_submitted-4.pdf
58. *K. A. Avramidis, G. Gantenbein, Z. C. Ioannidis, I. Gr. Pagonakis, T. Rzesnicki, M. Thumm, J. Jelonnek, A. Bertinetti, L. Savoldi, R. Zanino, F. Albajar, F. Cau, F. Cismondi, Y. Rozier, F. Legrand, "Numerical studies on the influence of cavity thermal expansion on the performance of a high-power gyrotron", *18th International Vacuum Electronics Conference (IVEC 2017)*, 24-26 April 2017, London, United Kingdom. https://doi.org/10.1109/IVEC.2017.8289512
59. Z. C. Ioannidis, T. Rzesnicki, K. Avramidis, G. Gantenbein, S. Illy, J. Jin, T. Kobarg, I. Gr. Pagonakis, M. Schmid, M. Thumm, J. Jelonnek, V. Hermann, Y. Rozier, F. Legrand, S. Alberti, F. Braunmueller, J.-P. Hogge, C. Schlatter, J. Genoud, M. Q. Tran, W. Kasparek, C. Lechte, J. L. Vomvoridis, J. Chelis, G. P. Latsas, A. Zisis, I. G. Tigelis, A. Bruschi, M. Lontano, F. Albajar, T. Bonicelli, P.-E. Frigot, "First CW experiments with the EU ITER 1 MW, 170 GHz industrial prototype gyrotron", *18th International Vacuum Electronics Conference (IVEC 2017)*, 24-26 April 2017, London, United Kingdom. https://doi.org/10.1109/IVEC.2017.8289742
60. F. Wilde, H. P. Laqua, S. Marsen, T. Stange, K. A. Avramidis, G. Gantenbein, J. Jelonnek, S. Illy, I. Gr. Pagonakis, M. Thumm, "Measurements of satellite modes in 140 GHz Wendelstein 7-X gyrotrons: An approach to an electronic stability control", *18th International Vacuum Electronics Conference (IVEC 2017)*, 24-26 April 2017, London, United Kingdom. https://doi.org/10.1109/IVEC.2017.8289661
61. S. Illy, P. C. Kalaria, J.Franck, K. A. Avramidis, G. Gantenbein, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "Investigation on misalignment tolerances of 240-GHz DEMO gyrotrons", *18th International Vacuum Electronics Conference (IVEC 2017)*, 24-26 April 2017, London, United Kingdom. https://doi.org/10.1109/IVEC.2017.8289600
62. M. C. Balk, C. Wu, K. Avramides, S. Illy, "2nd harmonic gyrotron simulation with CST STUDIO SUITE®", *18th International Vacuum Electronics Conference (IVEC 2017)*, 24-26 April 2017, London, United Kingdom. https://doi.org/10.1109/IVEC.2017.8289628
63. M. C. Lin, S. Illy, K. Avramidis, M. Thumm, and J. Jelonnek, "Study on the after cavity interaction in a 140 GHz model $TE_{0,3}$ gyrotron using 3D CFDTD PIC simulations", *18th*

International Vacuum Electronics Conference (IVEC 2017), 24-26 April 2017, London, United Kingdom. https://doi.org/10.1109/IVEC.2017.8289675

64. F. Albajar, S. Alberti, K. Avramidis, W. Bin, T. Bonicelli, F. Braunmueller, A. Bruschi, F. Cau, J. Chelis, F. Cismondi, C. Darbos, P.-E. Frigot, G. Gantenbein, M. Henderson, V. Hermann, J.-P. Hogge, S. Illy, Z. C. Ioannidis, J. Jelonnek, J. Jin, W. Kasparek, T. Kobarg, G. P. Latsas, C. Lechte, M. Lontano, M. Losert, I. G. Pagonakis, Y. Rozier, T. Rzesnicki, C. Schlatter, M. Schmid, M. Thumm, I. G. Tigelis, M. Q. Tran, J. L. Vomvoridis, "The development of the European 1 MW, 170 GHz CW gyrotron for the ITER electron cyclotron heating system", *26th IAEA Fusion Energy Conference*, 17-22 October 2016, Kyoto, Japan. https://nucleus.iaea.org/sites/fusionportal/Shared%20Documents/FEC%202016/fec2016-preprints/preprint0779.pdf

65. G. Granucci, J. Jelonnek, G. Aiello, S. Alberti, K. A. Avramidis, F. Braunmüller, A.Bruschi, J. Chelis, J. Franck, G. Gantenbein, S. Garavaglia, G. Grossetti, S. Illy, Z. Ioannidis, P. Kalaria, A. Moro, I. Gr. Pagonakis, E. Poli, N. Rispoli, T. Rzesnicki, T. Scherer, D. Strauss, M. Thumm, I. Tigelis, C. Wu, T. Franke, and M. Q. Tran, "Conceptual design of the DEMO EC-system: Main developments and R&D achievements", *26th IAEA Fusion Energy Conference*, 17-22 October 2016, Kyoto, Japan. https://nucleus.iaea.org/sites/fusionportal/Shared%20Documents/FEC%202016/fec2016-preprints/preprint0190.pdf

66. *K. A. Avramidis, I. Gr. Pagonakis, I. G. Chelis, G. Gantenbein, Z. C. Ioannidis, D. V. Peponis, T. Rzesnicki, and J. Jelonnek, "Simulations of the experimental operation of the EU 170 GHz, 1 MW short-pulse prototype gyrotron for ITER", *41st Int. Conf. Infrared Millimeter THz Waves*, 25-30 September 2016, Copenhagen, Denmark. https://doi.org/10.1109/IRMMW-THz.2016.7758517

67. J.-P. Hogge, S. Alberti, F. Braunmueller, C. Schlatter, M. Q. Tran, K. Avramidis, G. Gantenbein, S. Illy, Z. C. Ioannidis, J. Jelonnek, J. Jin, T. Kobarg, M. Losert, I. G. Pagonakis, T. Rzesnicki, M. Schmid, M. Thumm, V. Hermann, Y. Rozier, J. Chelis, J. L. Vomvoridis, G. P. Latsas, I. G. Tigelis ,A. Zisis, W. Bin, A. Bruschi, M. Lontano, W. Kasparek, C. Lechte, F. Albajar, T. Bonicelli, P.-E. Frigot, "Status and experimental results of the European 1 MW, 170 GHz industrial CW prototype gyrotron for ITER", *41st Int. Conf. Infrared Millimeter THz Waves*, 25-30 September 2016, Copenhagen, Denmark. https://doi.org/10.1109/IRMMW-THz.2016.7758398

68. S. Ruess, K. Avramidis, G. Gantenbein, S. Illy, I. Gr. Pagonakis, T. Rzesnicki, M. Thumm, and J. Jelonnek, "Proposal of an Inverse Magnetron Injection Gun for future hollow-cylindrical-cavity high power gyrotrons", *41st Int. Conf. Infrared Millimeter THz Waves*, 25-30 September 2016, Copenhagen, Denmark. https://doi.org/10.1109/IRMMW-THz.2016.7758916

69. S. Alberti, J. Genoud, T. Goodman, J.-P. Hogge, M. Silva, T. M. Tran, M. Q. Tran, K. Avramidis, I. Gr. Pagonakis, J. Jin, S. Illy, G. Gantenbein, J. Jelonnek, M. Thumm, W. Bin, S. Garavaglia, A. Moro, V. Hermann, F. Legrand, Y. Rozier, "Progress on the upgrade of the TCV EC-system with two 1 MW dual-frequency gyrotrons", *41st Int. Conf. Infrared Millimeter THz Waves*, 25-30 September 2016, Copenhagen, Denmark. https://doi.org/10.1109/IRMMW-THz.2016.7758479

70. D. V. Peponis, Z. C. Ioannidis, K. A. Avramidis, and I. G. Tigelis, "Sensitivity analysis of a 140-GHz coaxial gyrotron cavity with corrugations on the inner and outer wall", *41st Int. Conf. Infrared Millimeter THz Waves*, 25-30 September 2016, Copenhagen, Denmark. https://doi.org/10.1109/IRMMW-THz.2016.7758522

71. Y. Rozier, F. Albajar, S. Alberti, K. A. Avramidis, T. Bonicelli, F. Cismondi, P.-E. Frigot, G. Gantenbein, V. Hermann, J.-P. Hogge, J. Jelonnek, J. Jin, F. Legrand, G. Lietaer, I. Gr. Pagonakis,

T. Rzesnicki, M. Thumm, "Manufacturing and tests of the European 1 MW, 170 GHz CW gyrotron prototype for ITER", *17th IEEE International Vacuum Electronics Conference (IVEC 2016)*, 19-21 April 2016, Monterey, CA, USA. https://doi.org/10.1109/IVEC.2016.756179 5

72. P. C. Kalaria, K. A. Avramidis, J. Franck, G. Gantenbein, S. Illy, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "Investigation on mode eigenvalue limits for stable 236 GHz, 1 MW-class gyrotron operation", *17th IEEE International Vacuum Electronics Conference (IVEC 2016)*, 19-21 April 2016, Monterey, CA, USA. https://doi.org/10.1109/IVEC.2016.7561978
73. P. Kalaria, K. A. Avramidis, J. Franck, G. Gantenbein, S. Illy, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "A fast frequency step-tunable 236 GHz gyrotron design for DEMO", *10th German Microwave Conference: GeMiC 2016,* 14-16 March 2016, Bochum, Germany (**peer reviewed**). https://doi.org/10.1109/GEMIC.2016.7461635
74. J. Franck, K. A. Avramidis, I. Gr. Pagonakis, S. Illy, G. Gantenbein, M. Thumm, and J. Jelonnek, "Multi-frequency design of a 2 MW coaxial-cavity gyrotron for DEMO", *40th Int. Conf. Infrared Millimeter THz Waves*, 23-28 August 2015, Hong Kong. https://doi.org/10.1109/IRMMW-THz.2015.7327638
75. S. Alberti, F. Braunmueller, J. Genoud, J.-P. Hogge, T. M. Tran, M. Q. Tran, K. Avramidis, I. Gr. Pagonakis, J. Jin, S. Illy, G. Gantenbein, J. Jelonnek, F. Cismondi, "Dual-frequency, 126/84 GHz, 1MW gyrotron for the upgrade of the TCV EC-system", *40th Int. Conf. Infrared Millimeter THz Waves*, 23-28 August 2015, Hong Kong. https://doi.org/10.1109/IRMMW-THz.2015.7327860
76. T. Rzesnicki, I. G. Pagonakis, A. Samartsev, K. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, M. Losert, B. Piosczyk, M. Thumm, and EGYC Team, "Recent experimental results of the European 1 MW, 170 GHz short-pulse gyrotron prototype for ITER", *40th Int. Conf. Infrared Millimeter THz Waves*, 23-28 August 2015, Hong Kong. https://doi.org/10.1109/IRMMW-THz.2015.7327492
77. G. Gantenbein, A. Samartsev, K. A. Avramidis, G. Dammertz, M. Thumm, and J. Jelonnek, "Efficient frequency step-tunable Megawatt-class D-band gyrotron", *40th Int. Conf. Infrared Millimeter THz Waves*, 23-28 August 2015, Hong Kong. https://doi.org/10.1109/IRMMW-THz.2015.7327857
78. T. Franke, J.-M. Noterdaeme, K. Avramidis, J. Jelonnek, G. Granucci, M. Kalsey, A. Simonin, P. Sonato, M. Q. Tran, "On the present status of the EU DEMO H&CD systems, technology, functions and mix", *IEEE Pulsed Power Conference & Symposium on Fusion Engineering – PPC 2015 SOFE*, 31 May – 4 June 2015, Austin, Texas, USA. https://doi.org/10.1109/SOFE.2015.7482410
79. J. Franck, I. Gr. Pagonakis, K. A. Avramidis, G. Gantenbein, S. Illy, M. Thumm, and J. Jelonnek, "Magnetron Injection Gun for a 238 GHz 2 MW coaxial-cavity gyrotron", *9th German Microwave Conference: GeMiC 2015*, 16-18 March 2015, Nuernberg, Germany, Conference proceedings pp. 260-263 (**peer reviewed**). https://doi.org/10.1109/GEMIC.2015.7107803
80. P. Kalaria, K. A. Avramidis, J. Franck, S. Illy, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "Interaction circuit design and RF behavior of a 236 GHz gyrotron for DEMO", *9th German Microwave Conference: GeMiC 2015*, 16-18 March 2015, Nuernberg, Germany, Conference proceedings pp. 264-267 (**peer reviewed**). https://doi.org/10.1109/GEMIC.2015.7107804
81. K. A. Avramidis, A. Samartsev, and G. Gantenbein, "Optimization of the resonator of a MW-class frequency step-tunable gyrotron", *16th IEEE International Vacuum Electronics Conference (IVEC 2015)*, 27-29 April 2015, Beijing, China. https://doi.org/10.1109/IVEC.2015.7223807
82. J. Jelonnek, G. Aiello, K. Avramidis, J. Franck, G. Gantenbein, G. Grossetti, K. Hesch, S. Illy, J. Jin, P. Kalaria, I. Gr. Pagonakis, T. Rzesnicki, S. Ruess, A. Samartsev, T. Scherer, D. Strauss, C. Wu, M. Thumm, S. Alberti, F. Braunmueller, J. Genoud, J.-P. Hogge, C. Schlatter, T.-M. Tran, M. Q. Tran, I. Chelis, J. L. Vomvoridis, Z. C. Ioannidis, G. Latsas, I. G. Tigelis, A. Bruschi, M.

Lontano, V. Hermann, F. Legrand, Y. Rozier, F. Albajar, T. Bonicelli, F. Cismondi, "From W7-X towards ITER and beyond: Status and progress in EU fusion gyrotron developments", *16th IEEE International Vacuum Electronics Conference (IVEC 2015)*, 27-29 April 2015, Beijing, China. https://doi.org/10.1109/IVEC.2015.7223795

83. P. C. Kalaria, K. A. Avramidis, J. Franck, S. Illy, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "Multi-frequency operation of DEMO gyrotron realistic electron beam parameters", *16th IEEE International Vacuum Electronics Conference (IVEC 2015)*, 27-29 April 2015, Beijing, China. https://doi.org/10.1109/IVEC.2015.7223769

84. J. Jelonnek, K. A. Avramidis, J. Franck, G. Gantenbein, K. Hesch, J. Jin, P. Kalaria, I. Gr. Pagonakis, T. Rzesnicki, M. Schmid, and M. Thumm, "Development of advanced gyrotrons", *39th Int. Conf. Infrared Millimeter THz Waves*, 14-19 September 2014, Tucson, AZ, USA. https://doi.org/10.1109/IRMMW-THz.2014.6956447

85. *K. A. Avramidis, Z. C. Ioannidis, A. Samartsev, A. Roy Choudhury, S. Alberti, I. G. Tigelis, "Simulations of dynamic after-cavity interaction in gyrotrons", *9th Int. Workshop on Strong microwaves and Terahertz waves: Sources and applications*, 24 -30 July 2014, Nizhny Novgorod, Russia, Conference proceedings, pp. 168-169.

86. J. Jelonnek, K. A. Avramidis, J. Franck, G. Gantenbein, K. Hesch, S. Illy, J. Jin, P. Kalaria, A. Malygin, I. Gr. Pagonakis, T. Rzesnicki, A. Samartsev, S. Ruess, A. Schlaich, T. Scherer, D. Strauss, C. Wu, M. Thumm, J. Zhang, "From ITER towards DEMO: Status and plans for gyrotron developments at KIT", *9th Int. Workshop on Strong microwaves and Terahertz waves: Sources and applications*, 24 -30 July 2014, Nizhny Novgorod, Russia, Conference proceedings, pp. 5-6.

87. A. Malygin, S. Illy, I. Pagonakis, K. Avramides, M. Thumm, J. Jelonnek, L. Ives, G. Collins, "Experimental investigations of a 15kW/28GHz second harmonic CW gyrotron designed for evaluation of new emitter technologies", *9th Int. Workshop on Strong microwaves and Terahertz waves: Sources and applications*, 24 -30 July 2014, Nizhny Novgorod, Russia, Conference proceedings, pp. 162-163.

88. I. Gr. Pagonakis, K. Avramidis, S. Illy, P. Kalaria, G. Gantenbein, and J. Jelonnek, "Electron beam simulation in the overall gyrotron geometry", *9th Int. Workshop on Strong microwaves and Terahertz waves: Sources and applications*, 24 -30 July 2014, Nizhny Novgorod, Russia, Conference proceedings, pp. 155-156.

89. F. Albajar, G. Aiello, S. Alberti, F. Arnold, K. Avramidis, M. Bader, R. Batista, R. Bertizzolo, T. Bonicelli, F. Braunmueller, C. Brescan, A. Bruschi, B. von Burg, K. Camino, G. Carannante, V. Casarin, A. Castillo, F. Cauvard, C. Cavalieri, M. Cavinato, R. Chavan, J. Chelis, F. Cismondi, D. Combescure, C. Darbos, P. Dharmesh, D. Farina, D. Fasel, L. Figini, M. Gagliardi, F. Gandini, G. Gantenbein, T. Gassmann, R. Gessner, T.P. Goodman, V. Gracia, G. Grossetti, C. Heemskerk, M. Henderson, V. Hermann, J.P. Hogge, S. Illy, Z. Ioannidis, J. Jelonnek, J. Jin, W. Kasparek, J. Koning, A.S. Krause, J.D. Landis, G. Latsas, F.Li, F. Mazzocchi, A. Meier, A. Moro, R. Nousiainen, S. Nowak, J. van Oosterhout, J. Pacheco, I. Pagonakis, P. Platania, E. Poli, A.K. Preis, D. Ronden, Y. Rozier, T. Rzesnicki, G. Saibene, F. Sanchez, F. Sartori, O. Sauter, T. Scherer, C. Schlatter, S. Schreck, A. Serikov, U. Siravo, C. Sozzi, P. Spaeh, A. Spichiger, D. Strauss, K. Takahashi, M. Thumm, I. Tigelis, O. Toshimichi, A. Vaccaro, J. Vomvoridis, M.Q. Tran, B. Weinhorst "Status of Europe's contribution to the ITER EC system", *EC-18, 18th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating,* 22-25 April 2014, Nara, Japan, EPJ Web of Conferences **87**, 04004 (2015). http://dx.doi.org/10.1051/epjconf/20158704004

90. J. Franck, S. Illy, K. A. Avramidis, J. Jelonnek, M. Thumm, "Mode selection and resonator design for DEMO gyrotrons", *15th IEEE International Vacuum Electronics Conference (IVEC 2014)*, 22-24 April 2014, Monterey, CA, USA. https://doi.org/10.1109/IVEC.2014.6857475

91. J. Jelonnek, K. Avramidis, J. Franck, G. Dammertz, G. Gantenbein, K. Hesch, S. Illy, J. Jin, A. Malygin, I. Gr. Pagonakis, B. Piosczyk, T. Rzesnicki, A. Samartsev, A. Schlaich, M. Thumm, J. Zhang, "KIT Contribution to the gyrotron development for nuclear fusion experiments in Europe", *8th German Microwave Conference: GeMiC 2014*, 10-12 March 2014, Aachen, Germany (**peer reviewed**). https://ieeexplore.ieee.org/document/6775167

92. M. Thumm, J. Franck, S. Illy, K. A. Avramidis, P. C. Kalaria, and J. Jelonnek, "Towards a high-power millimeter-wave gyrotron for DEMO", *5th Int. Workshop on Far-Infrared Technologies (IW-FIRT2014)*, 5-7 March 2014, Fukui, Japan.

93. M. Thumm, K. Avramidis, G. Gantenbein, K. Hesch, J. Jelonnek, J. Jin, I. Pagonakis, B. Piosczyk, T. Rzesnicki, M. Schmid, S. Alberti, J.-P. Hogge, M. Q. Tran, V. Erckmann, H. Laqua, G. Michel, P. Benin, F. Legrand, Y. Rozier, J. L. Vomvoridis, Z. C. Ioannidis, G. P. Latsas, I. G. Tigelis, F. Albajar, T. Bonicelli, F. Cismondi, "Series production of 1 MW, 140 GHz, CW gyrotrons for W7-X leading to EU-1 MW, 170 GHz, CW Gyrotrons for ITER", *Proc. Symposium on Vacuum Electronic Devices & Applications (VEDA 2013),* Roorkee, India, 18-20 October 2013, Invited Keynote Paper KNA01.

94. *K. A. Avramidis, I. Gr. Pagonakis, Z. C. Ioannidis, and I. G. Tigelis, "Numerical investigations on the effects of electron beam misalignment on beam-wave interaction in a high-power coaxial gyrotron", *38th Int. Conf. Infrared Millimeter THz Waves*, 1-6 September 2013, Mainz on the Rhine, Germany. https://doi.org/10.1109/IRMMW-THz.2013.6665425

95. Z. C. Ioannidis, K. A. Avramidis, G. P. Latsas, and I. G. Tigelis, "Eigenvalue Spectrum of coaxial cavities with corrugations on the inner and the outer wall", *38th Int. Conf. Infrared Millimeter THz Waves*, 1-6 September 2013, Mainz on the Rhine, Germany. https://doi.org/10.1109/IRMMW-THz.2013.6665655

96. I. G. Chelis, K. A. Avramidis, and J. L.Vomvoridis, "Simulation of parasitic gyrotron interaction in beam tunnels", *38th Int. Conf. Infrared Millimeter THz Waves*, 1-6 September 2013, Mainz on the Rhine, Germany. https://doi.org/10.1109/IRMMW-THz.2013.6665458

97. J. Jelonnek, K. Avramidis, J. Franck, G. Gantenbein, K. Hesch, S. Illy, J. Jin, A. Malygin, I. Pagonakis, T. Rzesnicki, A. Samartsev, T. Scherer, A. Schlaich, M. Schmid, D. Strauss, M. Thumm, J. Zhang, "KIT gyrotron development for future Fusion applications", *38th Int. Conf. Infrared Millimeter THz Waves*, 1-6 September 2013, Mainz on the Rhine, Germany. https://doi.org/10.1109/IRMMW-THz.2013.6665487

98. J. Jelonnek, F. Albajar, S. Alberti, K. Avramidis, P. Benin, T. Bonicelli, F. Cismondi, V. Erckmann, G. Gantenbein, K. Hesch, J.-P. Hogge, S. Illy, Z. C. Ioannidis, J. Jin, H. Laqua, G. P. Latsas, F. Legrand, G. Michel, I. Gr. Pagonakis, B. Piosczyk, Y. Rozier, T. Rzesnicki, I. G. Tigelis, M. Thumm, M. Q. Tran, J. L. Vomvoridis, "From series production of gyrotrons for W7-X towards EU-1 MW gyrotrons for ITER" ", *19th IEEE Pulsed Power Conference (PPC),*16-21 June 2013, San Francisco, CA, USA. https://doi.org/10.1109/PPC.2013.6627710

99. I. Gr. Pagonakis, G. Gantenbein, J. Jelonnek, J. Jin, S. Illy, S. Kern, B. Piosczyk, T. Rzesnicki, M. Thumm, K. A. Avramides, J. L. Vomvoridis, O. Dumbrajs, P. Benin, Y. Rozier, S. Alberti, J.-P. Hogge, C. Schlatter, M.-Q. Tran, A. Bruschi, M. Lontano, Z. C. Ioannidis, G. P. Latsas, I. G. Tigelis, F. Albajar, T. Bonicelli, F. Cismondi, "Design of the EU-1MW gyrotron for ITER", *14th IEEE International Vacuum Electronics Conference (IVEC 2013)*, 21-23 May 2013, Paris, France. https://doi.org/10.1109/IVEC.2013.6571106

100. A. Malygin, S. Illy, I. Gr. Pagonakis, K. Avramides, M. Thumm, J. Jelonnek, D. D'Andrea, L. Ives, C.-D. Munz, "Analysis of mode competition in 10kW/28GHz gyrotron", *14th IEEE International Vacuum Electronics Conference (IVEC 2013)*, 21-23 May 2013, Paris, France. https://doi.org/10.1109/IVEC.2013.6571021

101. *K. A. Avramides, A. K. Ram, O. Dumbrajs, S. Alberti, and S. Kern, "On the numerical scheme employed in gyrotron interaction simulations", *EC-17, 17th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 7-11 May 2012, Deurne, The Netherlands, EPJ Web of Conferences **32**, 04017 (2012). http://dx.doi.org/10.1051/epjconf/20123204017

102. *K. A. Avramides, I. Gr. Pagonakis, C. T. Iatrou, and J. L. Vomvoridis, "EURIDICE: A code-package for gyrotron interaction simulations and cavity design", *EC-17, 17th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 7-11 May 2012, Deurne, The Netherlands, EPJ Web of Conferences **32**, 04016 (2012). http://dx.doi.org/10.1051/epjconf/20123204016

103. S. Kern, J.-P. Hogge, S. Alberti, K. Avramides, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, I. Gr. Pagonakis, B. Piosczyk, T. Rzesnicki, M. K. Thumm, I. Tigelis, M. Q. Tran, and the whole EU home team at EGYC, "Experimental results and recent developments on the EU 2 MW 170 GHz coaxial cavity gyrotron for ITER", *EC-17, 17th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 7-11 May 2012, Deurne, The Netherlands, EPJ Web of Conferences **32**, 04009 (2012). http://dx.doi.org/10.1051/epjconf/20123204009

104. A. Malygin, S. Illy, I. Pagonakis, B. Piosczyk, S. Kern, J. Weggen, M. Thumm, K. Avramides, L. Ives, D. Marsden, "Design of a 10kW/28GHz gyrotron with a segmented emitter using controlled-porosity reservoir cathodes", *13th International Vacuum Electronics Conference and 9th International Vacuum Electron Sources Conference (IVEC/IVESC 2012)*, 24-26 April 2012, Monterey, California, USA. https://doi.org/10.1109/IVEC.2012.6262184

105. J. Jelonnek, S. Alberti, K. Avramidis, H. Braune, V. Erckmann, G. Gantenbein, J.-P. Hogge, S. Illy, J. Jin, S. Kern, F. Noke, I. Pagonakis, B. Piosczyk, F. Purps, T. Rzesnicki, A. Samartsev, A. Schlaich, M. Schmid, and M. Thumm, "High power gyrotron development at KIT for ECH&CD of fusion plasmas", *13th International Vacuum Electronics Conference and 9th International Vacuum Electron Sources Conference (IVEC/IVESC 2012*, 24-26 April 2012, Monterey, California. USA. https://doi.org/10.1109/IVEC.2012.6262094

106. S. Alberti, T M. Tran, K. A. Avramides, F. Li, and J.-P. Hogge, "Gyrotron parasitic-effects studies using the time-dependent self-consistent monomode code TWANG", *36th Int. Conf. Infrared Millimeter THz Waves*, 2-7 October 2011, Houston ,TX, USA. https://doi.org/10.1109/irmmw-THz.2011.6105097

107. A. V. Malygin, I. Gr. Pagonakis, S. Illy, K. A. Avramides, B. Piosczyk, S. Kern, and M. Thumm, "Three-dimensional numerical studies of non-uniform emission in magnetron injection guns", *8th International Workshop "Strong Microwaves and Terahertz Waves: Sources and Applications"*, 9–16 July 2011, Nizhny Novgorod, Russia, Conference proceedings, pp. 99-100.

108. *K. A. Avramides, O. Dumbrajs, J. L. Vomvoridis, and S. Kern, "Gyrotron interaction simulations with tapered magnetostatic field", *35th Int. Conf. Infrared Millimeter THz Waves*, 5-10 September 2010, Rome, Italy. https://doi.org/10.1109/ICIMW.2010.5612619

109. S. Kern, K. A. Avramides, A. Roy Choudhury, O. Dumbrajs, G. Gantenbein, S. Illy, A. Samartsev, A. Schlaich, and M. Thumm, "Simulation and experimental investigations on dynamic After Cavity Interaction (ACI)", *35th Int. Conf. Infrared Millimeter THz Waves*, 5-10 September 2010, Rome, Italy, https://doi.org/10.1109/ICIMW.2010.5612609

110. Z. C. Ioannidis, S. Kern, K. A. Avramides, G. P. Latsas, and I. G. Tigelis, "The contribution of higher-order spatial harmonics in eigenvalues and ohmic losses calculations in coaxial corrugated cavities", *35th Int. Conf. Infrared Millimeter THz Waves*, 5-10 September 2010, Rome, Italy. https://doi.org/10.1109/ICIMW.2010.5612398

111. F. Albajar, T. Bonicelli, S. Alberti, K. A. Avramides, S. Cirant, G. Gantenbein, T. P. Goodman, S. Illy, Z. Ioannidis, J.-P. Hogge, J. Jin, S. Kern, G. Latsas, I. Gr. Pagonakis, B. Piosczyk,

T. Rzesnicki, M. Thumm, I. Tigelis, M. Q. Tran, J. Vomvoridis, P. Benin, C. Lievin, C. Darbos, T. Gassmann, M. Henderson, "The European 2 MW gyrotron for ITER", *EC-16, 16th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 12-15 April 2010, Sanya, China, Conference Proceedings, R. Prater Ed. pp. 331-338., World Scientific Publishing, 2011. https://doi.org/10.1142/8073

112. K. A. Avramides and I. Gr. Pagonakis, "On the effect of the approximations used in gyrotron interaction calculations", *34th Int. Conf. Infrared Millimeter THz Waves*, 21-25 September 2009, Busan, Korea. https://doi.org/10.1109/ICIMW.2009.5324768
113. S. Kern and K. A. Avramides, "Improving gyrotron interaction calculations", *34th Int. Conf. Infrared Millimeter THz Waves*, 21-25 September 2009, Busan, Korea. https://doi.org/10.1109/ICIMW.2009.5324700
114. S. Alberti, J.-P. Ansermet, K. A. Avramides, D. Fasel, J.-P. Hogge, S. Kern, C. Lievin, Y. Liu, A. Macor, I. Pagonakis, M. Silva, M. Q. Tran, T. M. Tran, and D. Wagner, "Design of a frequency-tunable gyrotron for DNP-enhanced NMR spectroscopy", *34th Int. Conf. Infrared Millimeter THz Waves*, 21-25 September 2009, Busan, Korea. https://doi.org/10.1109/ICIMW.2009.5324906
115. S. Kern, K. A. Avramides, M. H. Beringer, O. Dumbrajs, and Y.-H. Liu, "Gyrotron mode competition calculations: Investigations on the choice of numerical parameters", *33rd Int. Conf. Infrared Millimeter THz Waves*, 15-19 September 2008, Pasadena, California, USA. https://doi.org/10.1109/ICIMW.2008.4665584
116. I. Gr. Pagonakis, S. Illy, M. Silva, J.-Ph. Hogge, S. Alberti, K. A. Avramides, B. Piosczyk, F. Albajar, and T. Bonicelli, "Parameterization technique for the preliminary gun design of the EU 170 GHz 1 MW conventional cavity gyrotron for ITER", *33rd Int. Conf. Infrared Millimeter THz Waves*, 15-19 September 2008, Pasadena, California, USA. https://doi.org/10.1109/ICIMW.2008.4665518
117. S. Alberti, F. Albajar, K. A. Avramides, P. Benin, W. Bin, T. Bonicelli, A. Bruschi, S. Cirant, E. Droz, O. Dumbrajs, D. Fasel, F. Gandini, T. Goodman, J.-P. Hogge, S. Illy, S. Jawla, J. Jin, S. Kern, C. Lievin, B. Marlétaz, Ph. Marmillod, I. Pagonakis, A. Perez, B. Piosczyk, L.Porte, T. Rzesnicki, U. Siravo, M. Thumm, and M. Q. Tran, "Status of development of the 2 MW, 170 GHz coaxial-cavity gyrotron for ITER", *33rd Int. Conf. Infrared Millimeter THz Waves*, 15-19 September 2008, Pasadena, California, USA. https://doi.org/10.1109/ICIMW.2008.4665577
118. *K. A. Avramides, O. Dumbrajs, S. Kern, I. Gr. Pagonakis, and J. L. Vomvoridis, "Mode selection for a 170 GHz, 1 MW gyrotron", *35th EPS Conference on Plasma Physics*, 9 - 13 June 2008, Hersonissos, Crete, Greece, ECA vol. 32F, P-4.105, 2008, P. Lalousis and S. Moustaizis Eds. http://epsppd.epfl.ch/Hersonissos/pdf/P4_105.pdf
119. F. Albajar, S. Alberti, K. Avramides, T. Bonicelli, R. Claesen, O. Dumbrajs, D. Fasel, G. Gantenbein, T. Goodman, M. Henderson, J.-P. Hogge, S. Cirant, D. Fasel, S. Kern, S. Illy, J. Jin, G. Latsas, I. Pagonakis, B. Piosczyk, L. Porte, T. Rzesnicki, G. Saibene, M. Santinelli, M. Thumm, I. Tigelis, M. Q. Tran, J. Vomvoridis, "Review of the European programme for the development of the gyrotron for ITER", *EC-15, 15th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 10-13 March 2008, Yosemite National Park, California, USA, Conference Proceedings, John Lohr, Ed., World Scientific Publishing Singapore 2009, pp. 415-421. https://doi.org/10.1142/6859
120. *K. A. Avramides, I. Gr. Pagonakis, B. Piosczyk, and J. L. Vomvoridis, "Possible excitation of radial satellites in high-power gyrotrons", *Joint 32nd Int. Conf. Infrared Millimeter Waves and 15th Int. Conf. THz Electronics*, 3-7 September 2007, Cardiff, UK, Conference Digest, pp. 700-701, M. J. Griffin, P. C. Hargrave, T. J. Parker, and K. P. Wood Eds.

https://doi.org/10.1109/ICIMW.2007.4516688

121. O. Dumbrajs, K. A. Avramides, and B. Piosczyk, "Mode Competition in the 170 GHz Coaxial Gyrotron Cavity for ITER", *Joint 32nd Int. Conf. Infrared Millimeter Waves and 15th Int. Conf. THz Electronics*, 3-7 September 2007, Cardiff, UK, Conference Digest, pp. 48-49, M. J. Griffin, P. C. Hargrave, T. J. Parker, and K. P. Wood Eds. https://doi.org/10.1109/ICIMW.2007.4516389
122. I. Gr. Pagonakis, J.-P. Hogge, S. Alberti, K. A. Avramides, and J. L. Vomvoridis, "A new concept for the collection of an electron beam guided by an externally applied magnetic field", *Joint 32nd Int. Conf. Infrared Millimeter Waves and 15th Int. Conf. THz Electronics*, 3-7 September 2007, Cardiff, UK, Conference Digest, pp. 704-705, M. J. Griffin, P. C. Hargrave, T. J. Parker, and K. P. Wood Eds. https://doi.org/10.1109/ICIMW.2007.4516690
123. O. Dumbrajs, Y. Kominis, K. A. Avramides, K. Hizanidis, and J. L.Vomvoridis, "Numerical Study of the Hamiltonian Gyrotron Map", *Joint 31st Int. Conf. Infrared Millimeter Waves and 14th Int. Conf. THz Electronics*, 18-22 September 2006, Shanghai, China, Conference Digest, pp. 199-199. https://doi.org/10.1109/ICIMW.2006.368407
124. Y. Kominis, O. Dumbrajs, K. A. Avramides, K. Hizanidis, and J. L. Vomvoridis, "Hamiltonian theory of complex electron dynamics in gyrotron resonators", *EC-14, 14th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 9-12 May 2006, Santorini, Greece, Conference Proceedings, A. Lazaros Ed. https://hellasfusion.gr/images/stories/ec14/papers/44.pdf
125. *K. A. Avramides, C. T. Iatrou, and J. L. Vomvoridis, "Systematic procedure for operating-mode selection in conventional and coaxial-cavity gyrotrons", *EC-14, 14th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 9-12 May 2006, Santorini, Greece, Conference Proceedings, pp. 484-489, A. Lazaros Ed. https://hellasfusion.gr/images/stories/ec14/papers/59.pdf
126. *K. A. Avramides, J. L. Vomvoridis, and C. T. Iatrou, "Coaxial gyrotron cavities with resistive corrugated insert for powerful second-harmonic operation", *RF 2005, 7th Workshop on High Energy Density and High Power RF*, 13-17 June 2005, Kalamata, Greece, AIP Conference Proceedings, vol. 807, pp. 264-270, D. K. Abe and G. S. Nusinovich Eds. (2006). https://doi.org/10.1063/1.2158787
127. Y. Kominis, O. Dumbrajs, K. A. Avramides, K. Hizanidis, and J. L. Vomvoridis, "Dynamics and output momentum spectrum of electrons under harmonic resonance in gyrotron resonators", *RF 2005, 7th Workshop on High Energy Density and High Power RF*, 13-17 June 2005, Kalamata, Greece, AIP Conference Proceedings, vol. 807, pp. 232-237, D. K. Abe and G. S. Nusinovich Eds. (2006). https://doi.org/10.1063/1.2158782
128. *K. A. Avramides, J. L. Vomvoridis, B. Piosczyk, and C. T. Iatrou, "Second-harmonic operation of coaxial gyrotrons – Towards a proof-of-principle experiment", *Joint 29th International Conference on Infrared and Millimeter Waves and 12th International Conference on THz Electronics*, 27 September-1 October 2004, Karlsruhe, Germany, Conference Digest, pp. 627-628, M. Thumm and W. Wiesbeck, Eds. https://doi.org/10.1109/ICIMW.2004.1422247
129. Y. Kominis, O. Dumbrajs, K. A. Avramides, K. Hizanidis and J. L. Vomvoridis, "Chaotic electron dynamics in gyrotron resonators", *Joint 29th International Conference on Infrared and Millimeter Waves and 12th International Conference on THz Electronics*, 27 September-1 October 2004, Karlsruhe, Germany, Conference Digest, pp. 629-630, M. Thumm and W. Wiesbeck, Eds. https://doi.org/10.1109/ICIMW.2004.1422248
130. *C. T. Iatrou, K. A. Avramides, J. L. Vomvoridis, and B. Piosczyk, "Design considerations of powerful, second-cyclotron-harmonic coaxial-cavity gyrotrons", *26th International Conference on Infrared and Millimeter Waves*, 10-14 September 2001, Toulouse, France, Conference Digest, Gyro-Devices, pp. 5_24-5_27. (**peer reviewed**)

Ανακοινώσεις σε Διεθνή Επιστημονικά Συνέδρια χωρίς Πρακτικά

1. J. Jelonnek, G. Aiello, S. Alberti, K. Avramidis, H. Braune, A. Bruschic I. Chelis, B. Ell, T. Franke, G. Gantenbein, J.-P. Hogge, S. Illya Z. Ioannidis, J. Jin, H. Laqua, G. Latsas, A. Mareka S. Marsen, D. Moseev, J.-W. Oosterbeek, D. Peponis, L. Krier, T. Ruess, T. Rzesnicki, L. Savoldi, T. Scherer, P. Spaeh, S. Stanculovic, T. Stange, D. Strauss, M. Thumm, I. Tigelis, M.Q. Tran, R. Wolf, C. Wu, "Research on gyrotron components and control for advanced EC heating, plasma control and diagnostics", *30th Int. Toki Conference on Plasma and Fusion Research (ITC30)*, 16-19 November 2021 (Online conference).
2. J. Jelonnek, G. Gantenbein, K. Avramidis, B. Ell, S. Illy, Z. Ioannidis, J. Jin, L. Krier, A. Marek, I. Pagonakis, T. Rzesnicki, S. Stanculovic, T. Ruess, M. Thumm, F. Wilde, C. Wu, "Ongoing gyrotron activities at KIT", *8th International Workshop on Far-Infrared Technologies (IW-FIRT 2021),* 8-9 March 2021 (Online Conference).
3. *K. A. Avramidis, Z. C. Ioannidis, G. Aiello, P. Bénin, I. Chelis, A. Dinklage, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, H. P. Laqua, A. Leggieri, F. Legrand, A. Marek, S. Marsen5, I. Gr. Pagonakis, T. Ruess1 T. Rzesnicki, T. Scherer, D. Strauss2 M. Thumm, I. Tigelis, D. Wagner, J. Weggen, R. C. Wolf, and the Wendelstein 7-X Team, "Towards a 1.5 MW, 140 GHz gyrotron for the upgraded ECRH system at W7-X", *31st Symposium on Fusion Technology (SOFT 2020)*, 20-25 September 2020, virtual edition.
4. G. Aiello, K. A. Avramidis, G. Gantenbein, J. Jelonnek, J. Jin, H. Laqua, A. Meier, T. Scherer, D. Strauss, M. Thumm, "Design validation of the gyrotron diamond output window for the upgrade of the ECRH system at W7-X", *31st Symposium on Fusion Technology (SOFT 2020)*, 20-25 September 2020, virtual edition.
5. S. Stanculovic, R. Difonzo, A. Allio, K. A. Avramidis, P. Brücker, G. Gantenbein, S. Illy, J. Jelonnek, P. C. Kalaria, R. Lang, M. Misko, D. Papenfuss, U. Raghuvanshi, T. Rzesnicki, and L. Savoldi, "Calibration of the KIT test setup for the cooling tests of a gyrotron cavity full-size mock-up equipped with mini-channels", *31st Symposium on Fusion Technology (SOFT 2020)*, 20-25 September 2020, virtual edition.
6. C. Wu, K. Avramidis, A. Bruschi, E. Fable, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, S. Illy, F. Janky, J. Jelonnek, O. Kudlacek, A. Moro, E. Poli, T. Ruess, R. Schramm, M. Siccinio, A. Snicker, G. Suárez López, G. Tardini, M. Thumm, M. Q. Tran, H. Zohm, "Basic design considerations for a frequency step-tunable ERH&CD system to suppress NTMs in DEMO", *Invited talk*, *31st Symposium on Fusion Technology (SOFT 2020)*, 20-25 September 2020, virtual edition.
7. T. Franke, G. Aiello, K. Avramidis, C. Bachmann, B. Baiocchi, C. Baylard, A. Bruschi, D. Chauvin, A. Cufar, R. Chavan, C. Gliss, F. Fanale, L. Figini, G. Gantenbein, S. Garavaglia, G. Granucci, J. Jelonnek, G. S. López, A. Moro, N. Rispoli, M. Siccinio, P. Spaeh, D. Strauss, I. Tigelis, M. Q. Tran, C. Tsironis, C. Wu, H. Zohm, "Integration concept of an Electron Cyclotron System in DEMO", *31st Symposium on Fusion Technology (SOFT 2020)*, 20-25 September 2020, virtual edition.
8. A. Marek, K. A. Avramidis, N. S. Ginzburg, S. Illy, J. Jin, M. Thumm, and J. Jelonnek, "Simulations of a feedback system for coupled gyro-devices at 263 GHz", *7th ITG International Vacuum Electronics Workshop (IVEW) 2020 and 13th International Vacuum Electron Sources Conference (IVeSC) 2020*, 26 - 29 May 2020, Bad Honnef, Germany (online). https://www.ihm.kit.edu/VDE-ITG_FA_MN6.php
9. S. Illy, K. A. Avramidis, B. Ell, G. Gantenbein, Z. Ioannidis, J. Jin, L. Krier, A. Marek, I. Gr. Pagonakis, S. Stanculovic, T. Ruess, T. Rzesnicki, M. Thumm, C. Wu, and J. Jelonnek, "High power CW gyrotron development at KIT: current status and future prospects", *7th ITG*

International Vacuum Electronics Workshop (IVEW) 2020 and 13th International Vacuum Electron Sources Conference (IVeSC) 2020, 26 - 29 May 2020, Bad Honnef, Germany (online). https://www.ihm.kit.edu/VDE-ITG_FA_MN6.php

10. L. Krier, I. Gr. Pagonakis, K. A. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, H. P. Laqua, A. Marek, D. Moseev, and W7-X Team, "Considerations for the operation of a 140 GHz 1 MW Gyrotron at 175 GHz for CTS Plasma Diagnostics at W7-X", *7th ITG International Vacuum Electronics Workshop (IVEW) 2020 and 13th International Vacuum Electron Sources Conference (IVeSC) 2020*, 26 - 29 May 2020, Bad Honnef, Germany (online). https://www.ihm.kit.edu/VDE-ITG_FA_MN6.php
11. A. Leggieri, F. Albajar, S. Alberti, A. Allio, K. A. Avramidis, D. Bariou, W. Bin, A. Bruschi, I. Chelis, R. Difonzo, F. Fanale, G. Gantenbein, V. Hermann, J.P. Hogge, S. Illy, Z. Ioannidis, J. Jelonnek, J. Jin, F. Legrand, G. Lietaer, C. Lievin, R. Marchesin, I. Gr. Pagonakis, T. Rzesnicki, F. Sanchez, L. Savoldi, P. Thouvenin, M. Thumm, I. Tigelis, "Upgrade of the European ITER 170 GHZ 1 MW CW industrial gyrotron (TH1509)", *7th ITG International Vacuum Electronics Workshop (IVEW) 2020 and 13th International Vacuum Electron Sources Conference (IVeSC) 2020*, 26 - 29 May 2020, Bad Honnef, Germany (online). https://www.ihm.kit.edu/VDE-ITG_FA_MN6.php
12. T. Ruess, K. A. Avramidis, G. Gantenbein, S. Illy, Z. Ioannidis, J. Jin, I. Gr. Pagonakis, T. Rzesnicki, M. Thumm, J. Weggen, and J. Jelonnek, "From ITER to DEMO: Towards multi-purpose multi-MW gyrotrons operating above 200 GHz", *7th ITG International Vacuum Electronics Workshop (IVEW) 2020 and 13th International Vacuum Electron Sources Conference (IVeSC) 2020*, 26 - 29 May 2020, Bad Honnef, Germany (online). https://www.ihm.kit.edu/VDE-ITG_FA_MN6.php
13. G. Aiello, S. Schreck, K. A. Avramidis, T. Franke, G. Gantenbein, J. Jelonnek, A. Meier, T. Scherer, D. Strauss, M. Thumm, M. Q. Tran, C. Wild, E. Woerner "Towards large area CVD diamond disks for Brewster-angle windows", *14th International Symposium on Fusion Nuclear Technology* (*ISFNT 2019*), 22 - 27 September 2019, Budapest, Hungary. http://hdl.handle.net/21.11116/0000-0004-BCD7-6
14. D. Moseev, H. P. Laqua, T. Stange, I. Abramovic, S. K. Nielsen, S. Äkäslompolo, K. Avramidis, H. Braune, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, W. Kasparek, L. Krier, S. B. Korsholm, C. Lechte, A. Marek, S. Marsen, M. Nishiura, I. Pagonakis, M. Salewski, J. Rasmussen, A. Tancetti, M. Thumm, R. C. Wolf and W7-X Team, "Collective Thomson scattering diagnostic for Wendelstein 7-X at 175 GHz", *Laser Aided Plasma Diagnostics Symposium 2019 (LAPD 2019)*, 22-26 September 2019, Whitefish, Montana, USA.
http://hdl.handle.net/21.11116/0000-0004-CD82-2
15. J. Jelonnek, K. A. Avramidis, G. Aiello, S. Alberti, P. Brücker, A. Bruschi, I. Chelis, T. Franke, G. Gantenbein, S. Garavaglia, J. Genoud, M. George, G. Granucci, J.-P. Hogge, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, G. P. Latsas, A. Marek, I. Gr. Pagonakis, D. V. Peponis, T. Ruess, T. Rzesnicki, T. Scherer, M. Schmid, D. Strauss, M. Thumm, I. Tigelis, C. Wu, A. Zisis, M. Q. Tran, "2019 status and focus Areas in the development of an advanced gyrotron for EU DEMO", *Workshop on RF Heating Technology of Fusion Plasmas* (*US-EU-JPN RF Heating Technology Workshop*), 9-12 September 2019, Freiburg im Breisgau, Germany. https://publikationen.bibliothek.kit.edu/1000099922
16. G. Gantenbein, K. Avramidis, B. Ell, S. Illy, Z. C. Ioannidis, J. Jin, J. Jelonnek, P. Kalaria, I. Gr. Pagonakis, T. Ruess, T. Rzesnicki, M. Thumm, C. Wu, "High-power gyrotron development for fusion application at KIT", *Workshop on RF Heating Technology of Fusion Plasmas* (*US-EU-JPN RF Heating Technology Workshop*), 9-12 September 2019, Freiburg im Breisgau, Germany. https://publikationen.bibliothek.kit.edu/1000097931

17. I. G. Tigelis, K. A. Avramidis, J. Jelonnek, Z. C. Ioannidis, and D. V. Peponis, "Gyrotron coaxial cavities with corrugations on both the inner and outer walls", *Workshop on RF Heating Technology of Fusion Plasmas* (*US-EU-JPN RF Heating Technology Workshop*), 9-12 September 2019, Freiburg im Breisgau, Germany. https://publikationen.bibliothek.kit.edu/1000095038

18. P. Kalaria, P. T. Brücker, S. Ruess, K. Avramidis, S. Illy, G. Gantenbein, M. Thumm, J. Weggen, and J. Jelonnek, "Development of advanced mini-channel cavity cooling systems for a 170 GHz, 2 MW coaxial cavity gyrotron", *Workshop on RF Heating Technology of Fusion Plasmas* (*US-EU-JPN RF Heating Technology Workshop*), 9-12 September 2019, Freiburg im Breisgau, Germany. https://publikationen.bibliothek.kit.edu/1000097202

19. *K. A. Avramidis, Z. C. Ioannidis, G. Aiello, I. Chelis, A. Dinklage, G. Gantenbein, S. Illy, J. Jin, H. P. Laqua, A. Marek, S. Marsen, F. Noke, I. Gr. Pagonakis, T. Ruess, T. Rzesnicki, T. Scherer, T. Stange, D. Strauss, M. Thumm, I. Tigelis, D. Wagner, J. Weggen, R. C. Wolf, and J. Jelonnek, "Progress in the development of a 1.5 MW, 140 GHz gyrotron for the upgrade of the ECRH system at W7-X", *Workshop on RF Heating Technology of Fusion Plasmas* (*US-EU-JPN RF Heating Technology Workshop*), 9-12 September 2019, Freiburg im Breisgau, Germany. https://publikationen.bibliothek.kit.edu/1000097205

20. I. Gr. Pagonakis, K. A. Avramidis, C. Wu, M. Thumm, J. Jelonnek, "Numerical investigation of the influence of reflected collector electron current on gyrotron operation", *Workshop on RF Heating Technology of Fusion Plasmas* (*US-EU-JPN RF Heating Technology Workshop*), 9-12 September 2019, Freiburg im Breisgau, Germany. https://publikationen.bibliothek.kit.edu/1000097207

21. C.Wu, K. Avramidis, A. Bruschi, T. Franke, G. Granucci, J. Jelonnek, A. Moro, E. Poli, M. Thumm, M. Q. Tran, "Frequency step-tunable ECRH&CD from mid-plane port plug for the NTM stabilization in DEMO", *Workshop on RF Heating Technology of Fusion Plasmas* (*US-EU-JPN RF Heating Technology Workshop*), 9-12 September 2019, Freiburg im Breisgau, Germany. https://publikationen.bibliothek.kit.edu/1000097940

22. T. Ruess, K. A. Avramidis, G. Gantenbein, Z. Ioannidis, S. Illy, F.-C. Lutz, T. Rzesnicki, M. Thumm, D. Wagner, J. Weggen and J. Jelonnek, "Upgrade of the computer-controlled test system for the excitation of very high-order modes in waveguides", *Workshop on RF Heating Technology of Fusion Plasmas* (*US-EU-JPN RF Heating Technology Workshop*), 9-12 September 2019, Freiburg im Breisgau, Germany. https://publikationen.bibliothek.kit.edu/1000097203

23. A. Leggieri, L. Savoldi, F. Albajar, K. A. Avramidis, S. Alberti, A. Bertinetti, P. T. Brücker, F. Cau, R. Difonzo, G. Gantenbein, J.P. Hogge, S. Illy, J. Jelonnek, P. Kalaria, F. Legrand, C. Lievin, R. Marchesin, T. Rzesnicki, S. Ruess, P. Sanchez, P. Thouvenin, M. Thumm, J. Weggen, R. Zanino, "A high efficiency mini-channel cooling circuit for gyrotron cavities", *28th IEEE Symposium on Fusion Engineering* (*SOFE 2019*), 2 – 6 June 2019, Ponte Vedra Beach, Florida, USA.

24. J.-P. Hogge, S. Alberti, K. A. Avramidis, A. Bruschi, W. Bin, F. Cau, F. Cismondi, J. Dubray, D. Fasel, G. Gantenbein, S. Garavaglia, J. Genoud, S. Illy, J. Jin, F. Legrand, R. Marchesin, B. Marlétaz, J. Masur, A. Moro, C. Moura, I. Gr. Pagonakis, E. Périal, L. Savoldi, T. Scherer, U. Siravo, M. Thumm, M. Toussaint, and M.-Q. Tran, "Megawatt power generation of the dual-frequency gyrotron for TCV at 84 and 126 GHz, in long pulses", *23rd Topical Conference on Radiofrequency Power in Plasmas (RFPPC 2019)*, 14-17 May 2019, Hefei, China. https://www.semanticscholar.org/paper/Megawatt-Power-Generation-of-the-Dual-Frequency-for-Hogge-Alberti/cfd01fd9c216ba2cd9fbd22564ccfd2d43720c26

25. J. Jelonnek, K. A. Avramidis, G. Aiello, P. T. Brücker, B. Ell, G. Gantenbein, S. Illy, Z. C.

Ioannidis, J. Jin, T. Kobarg, W. Leonhardt, A. Marek, D. Mellein, M. Obermaier, I. Gr. Pagonakis, S. Ruess, T. Ruess, T. Rzesnicki, T. Scherer, M. Schmid, D. Strauß, M. Thumm, J. Weggen, F. Wilde, C. Wu "KIT contribution to the gyrotron development at Europe: pushing high-power microwaves towards sub-THz-frequencies", *1st French-German THz Conference*, 2 – 5. April 2019, Kaiserslautern, Germany.

26. G. Aiello, T. Scherer, K. Avramidis, N. Casal, T. Franke, M. Gagliardi, G. Ganbeinbein, M. Henderson, A. Meier, J. Jelonnek, G. Saibene, S. Schreck, D. Strauss, M. Thumm, M. Q. Tran, "Diamond window technology for EC heating and current drive – state of the art", *23rd Topical Meeting on the Technology of Fusion Energy (TOFE 2018)*, 11-15 November 2018, Orlando, FL, USA.
27. Z. C. Ioannidis, F. Albajar, S. Alberti, K. A. Avramidis, W. Bin, T. Bonicelli, A. Bruschi, J. Chelis, F. Fanale, G. Gantenbein, J. Genoud, J.-P. Hogge, V. Hermann, S. Illy, J. Jelonnek, J. Jin, W. Kasparek, G. P. Latsas, F. Legrand, C. Lechte, I. Gr. Pagonakis, T. Rzesnicki, F. Sánchez, C. Schlatter, M. Schmid, I. G. Tigelis, M. Thumm, M. Q. Tran, A. Zisis, A. Zein "Recent experiments with the European 1 MW, 170 GHz industrial CW and short-pulse gyrotrons for ITER", *30th Symposium on Fusion Technology (SOFT 2018)*, 16-21 September 2018, Messina, Sicily, Italy.
28. A. Bertinetti, F. Albajar, K. A. Avramidis, F. Cau, F. Cismondi, G. Gantenbein, J. Jelonnek, P. C. Kalaria, S. Ruess, T. Rzesnicki, L. Savoldi, R. Zanino, "Analysis of an actively-cooled coaxial cavity in a 170 GHz, 2 MW gyrotron using the multi-physics tool MUCCA", *30th Symposium on Fusion Technology (SOFT 2018)*, 16-21 September 2018, Messina, Sicily, Italy.
29. G. Gantenbein, K. Avramidis, S. Illy, Z. C. Ioannidis, J. Jin, J. Jelonnek, P. Kalaria, I. Gr. Pagonakis, S. Ruess, T. Ruess, T. Rzesnicki, M. Thumm, C. Wu, "New trends of gyrotron development at KIT: An overview on recent investigations", *30th Symposium on Fusion Technology (SOFT 2018)*, 16-21 September 2018, Messina, Sicily, Italy.
30. S. Alberti, D. Fasel, J. Dubray, T. Goodman, J.-P. Hogge, P.-F. Isoz, F. Legrand, B. Marlétaz, L. Porte, M. Silva, U. Siravo, M. Toussaint, A.Perez K. Avramidis, I. Gr. Pagonakis, J. Jin, S. Illy, G. Gantenbein, A. Bruschi, S. Garavaglia, A. Moro, E. Perial, "Status of development and commissioning of the TCV EC-system upgrade with two 1MW/2s dual-frequency (84/126GHz) gyrotrons", *30th Symposium on Fusion Technology (SOFT 2018)*, 16-21 September 2018, Messina, Sicily, Italy.
31. S. Ruess, K. A. Avramidis, G. Gantenbein, Z. Ioannidis, S. Illy, P. C. Kalaria, T. Kobarg, I. Gr. Pagonakis, T. Ruess, T. Rzesnicki, M. Thumm, J. Weggen, and J. Jelonnek, "Ongoing developments for the KIT 2 MW 170 GHz coaxial cavity gyrotron prototype", *6th ITG (VDE) International Vacuum Electronics Workshop 2018*, 6-7 September 2018, Bad Honnef, Germany. http://www.ihe.kit.edu/kooperationen_itg.php
32. P. C. Kalaria, M. George, S. Illy, K. A. Avramidis, G. Gantenbein, S. Ruess, M. Thumm, and J. Jelonnek, "Numerical investigations on the influence of insert misalignment on the insert loading of a 170 GHz, 2 MW coaxial-cavity gyrotron", *6th ITG (VDE) International Vacuum Electronics Workshop 2018*, 6-7 September 2018, Bad Honnef, Germany. http://www.ihe.kit.edu/kooperationen_itg.php
33. M. Obermaier, K. A. Avramidis, G. Gantenbein, S. Illy, S. Ruess, T. Ruess, M. Thumm, and J. Jelonnek, "Numerical study of very high-order volume modes as possible alternatives to the $TE_{34,19}$ operating mode of the KIT 2 MW-170 GHz coaxial cavity gyrotron", *6th ITG (VDE) International Vacuum Electronics Workshop 2018*, 6-7 September 2018, Bad Honnef, Germany. http://www.ihe.kit.edu/kooperationen_itg.php
34. C. Wu, I. Gr. Pagonakis, S. Illy, D. Albert, K. A. Avramidis, G. Gantenbein, M. Thumm, and J. Jelonnek, "Status of the gyrotron multistage depressed collector development at Karlsruhe

Institute of Technology", *6th ITG (VDE) International Vacuum Electronics Workshop 2018*, 6-7 September 2018, Bad Honnef, Germany. http://www.ihe.kit.edu/kooperationen_itg.php

35. T. Ruess, K. A. Avramidis, M. Fuchs, G. Gantenbein, S. Illy, S. Ruess, T. Rzesnicki, M. Thumm, D. Wagner, J. Weggen, and J. Jelonnek, "An advanced highly automated test system for the verification of quasi-optical gyrotron components", *6th ITG (VDE) International Vacuum Electronics Workshop 2018*, 6-7 September 2018, Bad Honnef, Germany. http://www.ihe.kit.edu/kooperationen_itg.php
36. A. Marek, K. A. Avramidis, S. M. Copplestone, N. S. Ginzburg, S. Illy, J. Jelonnek, J. Jin, S. V. Mishakin, P. Ortwein and M. Thumm, "Simulations towards the generation of ultra-short pulses with coupled gyro-devices", *6th ITG (VDE) International Vacuum Electronics Workshop 2018*, 6-7 September 2018, Bad Honnef, Germany. http://www.ihe.kit.edu/kooperationen_itg.php
37. *K. A. Avramidis, A. Bertinetti, Z. C. Ioannidis, G. Gantenbein, S. Illy, P. C. Kalaria, I. Gr. Pagonakis, T. Rzesnicki, L. Savoldi, M. Thumm, R. Zanino, and J. Jelonnek, "Validation of multi-physics gyrotron modeling against experimental results", *2018 US-EU-Japan RF Heating Technology Workshop*, Shizuoka, Japan, 5-7 September 2018. http://rfws2018.nifs.ac.jp/presentation.html; password available upon request
38. T. Rzesnicki, Z. C. Ioannidis, K. A. Avramidis, G. Gantenbein, S. Illy, J. Jin, J. Jelonnek, T. Kobarg, I. G. Pagonakis, S. Ruess, M. Schmid, M. Thumm, J. Weggen, "Status of current gyrotron experimental activities at KIT", *2018 US-EU-Japan RF Heating Technology Workshop*, Shizuoka, Japan, 5-7 September 2018. http://rfws2018.nifs.ac.jp/presentation.html; password available upon request
39. J. Jelonnek, G. Aiello, F. Albajar, S. Alberti, K. Avramidis, T. Bonicelli, A. Bruschi, J. Chelis, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, G. Grossetti, J.-P. Hogge, S. Illy, Z.C. Ioannidis, J. Jin, P. Kalaria, H. Laqua, G. P. Latsas, I. Gr. Pagonakis, D. V. Peponis, T. Rzesnicki, S. Ruess, T. Ruess, P. Sanchez, T. Scherer, M. Schmid, D. Strauss, C. Wu, I. Tigelis, M. Thumm, M. Q. Tran, F. Wilde, "2018 status of gyrotron R&D for W7-X, TCV, ITER and EU DEMO within Europe", *2018 US-EU-Japan RF Heating Technology Workshop*, Shizuoka, Japan, 5-7 September 2018. http://rfws2018.nifs.ac.jp/presentation.html; password available upon request
40. I. Gr. Pagonakis, C. Wu, B. Ell, K. A. Avramidis, G. Gantenbein, S. Illy, M. Thumm1, and J. Jelonnek, "Studies on multistage depressed collector concepts for high power gyrotrons", *2018 US-EU-Japan RF Heating Technology Workshop*, Shizuoka, Japan, 5-7 September 2018. http://rfws2018.nifs.ac.jp/presentation.html; password available upon request
41. S. Illy, M. George, P. C. Kalaria, K. A. Avramidis, G. Gantenbein, S. Ruess, M. Thumm, and J. Jelonnek, "Thermo-mechanical analysis of the insert cooling system for a 170 GHz, 2 MW long-pulse coaxial-cavity gyrotron", *2018 US-EU-Japan RF Heating Technology Workshop*, Shizuoka, Japan, 5-7 September 2018. http://rfws2018.nifs.ac.jp/presentation.html; password available upon request
42. F. Wilde, J. W. Oosterbeek, S. Marsen, D. Moseev, T. Stange, H. P. Laqua, R. C. Wolf, K. Avramidis, G. Gantenbein, I. Gr. Pagonakis, S. Illy, J. Jelonnek, M. Thumm, and W7-X team, "An automated mode recovery and a modeloss precursor for the 140 GHz Wendelstein 7-X gyrotrons", *2018 US-EU-Japan RF Heating Technology Workshop*, Shizuoka, Japan, 5-7 September 2018. http://rfws2018.nifs.ac.jp/presentation.html; password available upon request
43. A. Bertinetti, F. Albajar, K. A. Avramidis, F. Cau, F. Cismondi, P. C. Kalaria, .L. Savoldi, and R. Zanino, "Self-consistent multi-physics modelling for the analysis of the working conditions in gyrotron cavities", *9th International Conference on Computational Methods (9th ICCM)*, 6-10 August 2018, Rome, Italy. https://www.sci-en-tech.com/ICCM2018/PDFs/3349-10854-1-PB.pdf
44. F. Wilde, K. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, H. P. Laqua, S. Marsen, J. W. Oosterbeek, I. Gr. Pagonakis, T. Stange, M. Thumm, R. Wolf, and the W7-X team,

"Measurements of satellite mode activity and automated mode recovery in 140 GHz Wendelstein 7-X gyrotrons", *20th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating (EC – 20)*, 14-17 May 2018, Greifswald, Germany.

45. M. Thumm, K. A. Avramidis, J. Franck, G. Gantenbein, S. Illy, J. Jin P. C. Kalaria, I. Gr. Pagonakis, S. Ruess, C. Wu, and J. Jelonnek, "Design studies and analysis of operational limits of 0.24-THz gyrotrons for DEMO", *6th Shenzhen International Conference on Advanced Science and Technology*, 3-8 December 2017, Shenzhen, China. (*Plenary talk*).
46. J. Jelonnek, G. Aiello, S. Alberti, K. Avramidis, A. Bruschi, J. Chelis, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, G. Grossetti, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, G. P. Latsas, I. Gr. Pagonakis, D. V. Peponis, T. Rzesnicki, S. Ruess, T. Ruess, T. Scherer, M. Schmid, D. Strauss, C. Wu, I. Tigelis, M. Thumm, M. Q. Tran, F. Wilde, A. Zein, "2017 status of gyrotron R&D and advanced developments within KIT and EUROfusion", *US-EU-JPN RF Heating Workshop,* 5-8 September 2017, Santa Monica, USA.
47. T. Rzesnicki, Z. C. Ioannidis, F. Albajar, S. Alberti, K. A. Avramidis, W. Bin, T. Bonicelli, F. Braunmueller, A. Bruschi, J. Chelis, P.-E. Frigot, G. Gantenbein, V. Hermann, J.-P. Hogge, S. Illy, J. Jin, J. Jelonnek, W. Kasparek, G. P. Latsas, C. Lechte, M. Lontano, T. Kobarg, I. G. Pagonakis, Y. Rozier, C. Schlatter, M. Schmid, I. G. Tigelis, M. Thumm, M. Q. Tran, J. L. Vomvoridis, A. Zein, A. Zisis, "Experimental verification of the EU 1 MW, 170 GHz industrial prototype gyrotron for ITER at KIT", *US-EU-JPN RF Heating Workshop,* 5-8 September 2017, Santa Monica, USA.
48. I. G. Chelis, K. A. Avramidis, J. L. Vomvoridis, and I. G. Tigelis, "Development of a self-consistent simulation code for the electron cyclotron interaction in dielectric-loaded gyrotron beam tunnels", *10th Int. Workshop on Strong microwaves and Terahertz waves: Sources and applications*, 17 - 22 July 2017, Nizhny Novgorod - Moscow, Russia.
49. T. Franke, P. Agostinetti, G. Aiello, K. Avramidis, Ch. Bachmann, G. Federici, G. Granucci, G. Grossetti, J. Jelonnek, J.-M. Noterdaeme, A. Simonin, T. Scherer, P. Sonato, D. Strauss, M. Q. Tran, P. Vincenzi, R. Wenninger, S. Zheng, "H&CD designs and impact of the configurations on the performances for the EU DEMO fusion power plant reactor" *27th IEEE Symposium on Fusion Engineering*, *(SOFE 2017),* 4 - 8 June 2017, Shanghai, China.
50. Z. C. Ioannidis, T. Rzesnicki, K. Avramidis, G. Gantenbein, S. Illy, J. Jin, T. Kobarg, I. Gr. Pagonakis, M. Schmid, M. Thumm, A. Zein, J. Jelonnek, S. Alberti, F. Braunmueller, J.-P. Hogge, C. Schlatter, J. Genoud, M. Q. Tran, W. Kasparek, C. Lechte, J. Chelis, G. P. Latsas, A. Zisis, I. G. Tigelis, A. Bruschi, W. Bin, M. Lontano, V. Hermann, Y. Rozier, F. Legrand, F. Albajar, T. Bonicelli, P.-E. Frigot, "Progress of the experiments with the European 1 MW, 170 GHz industrial CW prototype gyrotron for ITER", *44th International Conference on Plasma Science* (*ICOPS 2017*), 21 - 25 May 2017, Atlantic City, NJ, USA. https://doi.org/10.1109/PLASMA.2017.8496136
51. M. C. Lin, S. Illy, K. Avramidis, M. Thumm, and J. Jelonnek, "Study on the after cavity interaction in a 140 GHz gyrotron using 3D CFDTD PIC simulations", *44th International Conference on Plasma Science* (*ICOPS 2017*), 21 - 25 May 2017, Atlantic City, NJ, USA. https://doi.org/10.1109/PLASMA.2017.8496032
52. J. Jelonnek, G. Aiello, K. Avramidis, J. Franck, G. Gantenbein, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, I. G. Pagonakis, T. Rzesnicki, S. Ruess, T. Scherer, D. Strauss, M. Thumm, C. Wu, "Heading from W7-X gyrotrons towards gyrotrons for DEMO: Research strategy and recent developments at KIT", *44th International Conference on Plasma Science* (*ICOPS 2017*), 21 - 25 May 2017, Atlantic City, NJ, USA. https://doi.org/10.1109/PLASMA.2017.8496011
53. G. Granucci, P. Agostinetti, K. Avramidis, J.-M. Noterdaeme, S. Garavaglia, G. Grossetti, J. Jelonnek, I. Jenkins, A. Simonin, P. Sonato, T. Franke, M. Q. Tran, "The heating systems of the

future European DEMOnstration fusion power plant", *23rd AIV Conference*, 5-7 April 2017, Florence, Italy.

54. S. Illy, K. A. Avramidis, J. Jin, A. Marek, I. Gr. Pagonakis, G. Gantenbein, J. Jelonnek, "An overview of the simulation tools for design and optimization of high power / high frequency gyrotron oscillators at KIT", *6th International Workshop on Far-Infrared Technologies (IW-FIRT 2017) and 2nd International Symposium on Development of High Power Terahertz Science and Technology (DHP-TST 2017)*, 7-9 March 2017, Fukui, Japan.
55. J. Jelonnek, G. Aiello, K. A. Avramidis, J. Franck, G. Gantenbein, G. Grossetti, S. Illy, Z. Ioannidis, J. Jin, P. Kalaria, I. Gr. Pagonakis, S. Ruess, Rzesnicki, T. Scherer, M. Schmid, D. Strauss, M. Thumm, C. Wu, "Towards 240 GHz high power fusion gyrotrons - KIT research status", *6th International Workshop on Far-Infrared Technologies (IW-FIRT 2017) and 2nd International Symposium on Development of High Power Terahertz Science and Technology (DHP-TST 2017)*, 7-9 March 2017, Fukui, Japan.
56. J. Jelonnek, G. Aiello, S. Alberti, K. A. Avramidis, F. Braunmüller, I. Chelis, J. Franck, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, G. Grossetti, S. Illy, Z. Ioannidis, J. Jin, P. Kalaria, I. Gr. Pagonakis, D. Peponis, T. Rzesnicki, S. Ruess, T. Scherer, D. Strauss, M. Thumm, I. Tigelis, M. Q. Tran, C. Wu, J. Zhang, "Progress in EUROfusion on gyrotron R&D and advanced developments for DEMO", *US-EU-JPN RF Heating Workshop,* 21-23 September 2016, Leinsweiler, Germany.
57. Z. C. Ioannidis, K. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, M. Losert, T. Kobarg, I. G. Pagonakis, T. Rzesnicki, M. Schmid, M. Thumm, V. Hermann, Y. Rozier, W. Kasparek, C. Lechte, S. Alberti, F. Braunmueller, J.-P. Hogge, C. Schlatter, M. Q. Tran, J. L. Vomvoridis, J. Chelis, G. P. Latsas, I. G. Tigelis, A. Bruschi, M. Lontano, F. Albajar, T. Bonicelli, P.-E. Frigot, "Recent experimental results with the 1 MW – 170 GHz industrial CW prototype gyrotron for ITER", *US-EU-JPN RF Heating Workshop,* 21-23 September 2016, Leinsweiler, Germany.
58. I. Gr. Pagonakis, K. A. Avramidis, T. Rzesnicki, G. Gantenbein and J. Jelonnek, "Magnetic profile analysis for high power gyrotron", *US-EU-JPN RF Heating Workshop,* 21-23 September 2016, Leinsweiler, Germany.
59. *K. A. Avramidis, I. Gr. Pagonakis, I. G. Chelis, G. Gantenbein, Z. C. Ioannidis, D. V. Peponis, T. Rzesnicki, and J. Jelonnek, "Simulations of the experimental operation of the EU 170 GHz, 1 MW short-pulse prototype gyrotron for ITER", *US-EU-JPN RF Heating Workshop,* 21-23 September 2016, Leinsweiler, Germany.
60. J. Franck, K. A. Avramidis, G. Gantenbein, S. Illy, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "Insert misalignment in coaxial gyrotrons: physical effects and numerical treatment", *5th ITG (VDE) International Vacuum Electronics Workshop 2016*, 7-9 September 2016, Bad Honnef, Germany. http://www.ihe.kit.edu/kooperationen_itg.php
61. P. C. Kalaria, K. A. Avramidis, J. Franck, G. Gantenbein, S. Illy, I. Gr. Pagonakis, M. Thumm, and J. Jelonnek, "Operation limits of a 236 GHz hollow-cavity gyrotron for DEMO", *5th ITG (VDE) International Vacuum Electronics Workshop 2016*, 7-9 September 2016, Bad Honnef, Germany. http://www.ihe.kit.edu/kooperationen_itg.php
62. S. Illy, F. Albajar, K. A. Avramidis, A. Bruschi, J. Franck, F. Wilde,3, G. Gantenbein, J. P. Hogge, J. Jin, P. Kalaria, I. Gr. Pagonakis, T. Rzesnicki, S. Ruess, M. Thumm, I. G. Tigelis, C. Wu, J. Zhang, and J. Jelonnek, "Recent status of gyrotron research and development at KIT as part of the European fusion gyrotron program", *5th ITG (VDE) International Vacuum Electronics Workshop 2016*, 7-9 September 2016, Bad Honnef, Germany. http://www.ihe.kit.edu/kooperationen_itg.php
63. A. Bertinetti, K. Avramidis, F. Albajar, F. Cau, F. Cismondi, Y. Rozier, L. Savoldi, R. Zanino, "Coupled thermal-hydraulic and thermal-mechanical analysis of a 1MW gyrotron cavity cooled

by mini-channels", *29th Symposium on Fusion Technology (SOFT 2016)*, 5-9 September 2016, Prague, Czech Republic.

64. T. Franke, P. Agostinetti, K. Avramidis, A. Bader, Ch. Bachmann, W. Biel, T. Bolzonella3 S. Ciattaglia, M. Coleman, F. Cismondi, G. Granucci, G. Grossetti, J. Jelonnek, I. Jenkins, M. Kalsey, R. Kembleton, N. Mantel, J. M. Noterdaeme, N. Rispoli, A. Simonin, P. Sonato, M. Q. Tran, P. Vincenzi, R. Wenninger, "Heating & Current Drive Efficiencies, TBR and RAMI considerations for DEMO", *29th Symposium on Fusion Technology (SOFT 2016)*, 5-9 September 2016, Prague, Czech Republic.
65. T. Rzesnicki, K. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, Z. C. Ioannidis, M. Losert, T. Kobarg, I. G. Pagonakis, M. Schmid, M. Thumm,V. Hermann, Y. Rozier, W. Kasparek, C. Lechte, S. Alberti, F. Braunmueller, J.-P. Hogge, C. Schlatter, M. Q. Tran, J. Chelis, J. L. Vomvoridis, G. P. Latsas, I. G. Tigelis, A. Bruschi, M. Lontano, F. Albajar, T. Bonicelli, P.-E. Frigot, "Experimental verification of the European 1 MW, 170 GHz industrial CW prototype gyrotron for ITER", *29th Symposium on Fusion Technology (SOFT 2016)*, 5-9 September 2016, Prague, Czech Republic.
66. J. Jelonnek, G. Aiello, A. Alberti, K. Avramidis, F. Braunmueller, A. Bruschi, J. Chelis, J. Franck, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, G. Grossetti, S. Illy, Z. C. Ioannidis, J. Jin, P. Kalaria, G. P. Latsas, I. Gr. Pagonakis, T. Rzesnicki, S. Ruess, T. Scherer, M. Schmid, D. Strauss, C. Wu, I. Tigelis, M. Thumm, M. Q. Tran, "Design considerations for future DEMO gyrotrons: A review on related gyrotron activities within EUROfusion", *29th Symposium on Fusion Technology (SOFT 2016)*, 5-9 September 2016, Prague, Czech Republic.
67. J. Jelonnek, G. Aiello, S. Alberti, K. A. Avramidis, F. Braunmüller, J. Franck, T. Franke, G. Gantenbein, S. Garavaglia, G. Granucci, G. Grossetti, S. Illy, Z. Ioannidis, J. Jin, P. Kalaria, I. Gr. Pagonakis, T. Rzesnicki, S. Ruess, T. Scherer, D. Strauss, M. Thumm, I. Tigelis, M. Q. Tran, C. Wu, J. Zhang, "Progress in EUROfusion WP HCD EC Gyrotron R&D and advanced developments for DEMO", *EC-19, 19th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 4-7 April 2016, Gandhinagar, India.
68. G. Gantenbein, K. Avramidis, S. Illy, J. Jin, M. Losert, I. G. Pagonakis, T. Rzesnicki, M. Thumm, J. Jelonnek, S. Alberti, F. Braunmueller, J.-P. Hogge, C. Schlatter, M. Q. Tran, J. Chelis, J. L. Vomvoridis, Z. C. Ioannidis, G. P. Latsas, I. G. Tigelis, A. Bruschi, M. Lontano, V. Hermann, Y. Rozier, F. Albajar, T. Bonicelli, P.-E. Frigot, "Status and recent results of the European 1 MW, 170 GHz gyrotron prototype for ITER", *EC-19, 19th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 4-7 April 2016, Gandhinagar, India.
69. M. Thumm, J. Franck, P.C. Kalaria, K.A. Avramidis, G. Gantenbein, S. Illy, I.G. Pagonakis, C. Wu, J. Zhang, and J. Jelonnek, "Towards a 0.24-THz, 1-to 2-MW-class gyrotron for DEMO", *5th Shenzhen International Conference on Advanced Science and Technology*, 18-22 August 2015, Shenzhen, China. (*Plenary talk*).
70. G. Gantenbein, K. Avramidis, S. Illy, J. Jelonnek, J. Jin, M. Losert, I. G. Pagonakis, T. Rzesnicki, A. Samartsev, M. Thumm, S. Alberti, F. Braunmueller, J.-P. Hogge, C. Schlatter, M. Q. Tran, J. Chelis, J. L. Vomvoridis, Z. C. Ioannidis, G. P. Latsas, I. G. Tigelis, A. Bruschi, M. Lontano, V. Hermann, F. Legrand, Y. Rozier, F. Albajar, T. Bonicelli, F. Cismondi, "Towards a European 1 MW, 170 GHz short-pulse gyrotron prototype for ITER", *JA-EU-US RF Heating Technology Workshop*, 31 August – 2 September 2015, Ryogoku, Japan.
71. J. Jelonnek, G. Aiello, S. Alberti, K. Avramidis, J. Franck, T. Franke, G. Gantenbein, G. Grossetti, G. Granucci, S. Illy, Z. Ioannidis, P. Kalaria, I. Pagonakis, T. Rzesnicki, S. Ruess, T. Scherer, D. Strauss, I. Tigelis, M. Thumm, M. Q. Tran3 E. Tsilis, C. Wu, J. Zhang, "Developments for future EU DEMO gyrotrons - 2015 update on developments within EUROfusion -", *JA-EU-US RF Heating Technology Workshop*, 31 August – 2 September 2015, Ryogoku, Japan.

72. I. Gr. Pagonakis, K. Avramidis, G. Gantenbein, K. Hesch, S. Illy, J. Jelonnek, J. Jin, B. Piosczyk, T. Rzesnicki, A. Samartsev, M. Thumm, S. Alberti, F. Braunmueller, J.-P. Hogge, C. Schlatter, T. M. Tran, M. Q. Tran, J. Chelis, J. L. Vomvoridis, Z. C. Ioannidis, G. P. Latsas, I. G. Tigelis, A. Bruschi, M. Lontano, V. Hermann, F. Legrand, Y. Rozier, F. Albajar, T. Bonicelli, F. Cismondi "Progress of the development of the European gyrotron for ITER - first experimental results", *42nd IEEE International Conference on Plasma Science (ICOPS 2015),* 24-28 May 2015, Antalya, Turkey.

73. G. Gantenbein, F. Albajar, K. Avramidis, A. Bruschi, F. Cismondi, J.-P. Hogge, S. Illy, J. Jelonnek, J. Jin, I. Gr. Pagonakis, Y. Rozier, T. Rzesnicki, A. Schlaich, M. Thumm, I. G. Tigelis, "Scientific design of the 1 MW 170 GHz EU gyrotron for ITER - Status of procurement and assembling", *US-EU-JPN RF Heating Technology Workshop,* 22-24 September 2014, Sedona, AZ, USA. https://fusion.gat.com/conferences/rfht/14/summary.html; password available upon request.

74. P. Kalaria, K. A. Avramidis, J. Franck, S. Illy, J. Jelonnek, I. Gr. Pagonakis, M. Thumm, "Conventional cylindrical-cavity gyrotron design for DEMO", *4th ITG (VDE) International Vacuum Electronics Workshop*,13-14 October 2014, Bad Honnef, Germany. https://www.vde.com/de/veranstaltungen/veranstaltungsuebersicht/veranstaltung-detailseite?id=7643&type=vde%7Cvdb

75. J. Franck, K. A. Avramidis, S. Illy, J. Jelonnek, I. Gr. Pagonakis, M. Thumm, "Design aspects for DEMO-compatible 2 MW gyrotrons: Electron gun and cavity", *4th ITG (VDE) International Vacuum Electronics Workshop*,13-14 October 2014, Bad Honnef, Germany. https://www.vde.com/de/veranstaltungen/veranstaltungsuebersicht/veranstaltung-detailseite?id=7643&type=vde%7Cvdb

76. J. Jelonnek, K. A. Avramidis, J. Franck, G. Gantenbein, K. Hesch, S. Illy, J. Jin, P. Kalaria, A. Malygin, I. Gr. Pagonakis, T. Rzesnicki, S. Ruess, A. Samartsev, A. Schlaich, T. Scherer, D. Strauss, M. Thumm, C. Wu, J. Zhang, "Status and prospects of gyrotron development at KIT: 2014 update", *4th ITG (VDE) International Vacuum Electronics Workshop*,13-14 October 2014, Bad Honnef, Germany. https://www.vde.com/de/veranstaltungen/veranstaltungsuebersicht/veranstaltung-detailseite?id=7643&type=vde%7Cvdb

77. S. Ruess, K. A. Avramidis, G. Gantenbein, J. Jelonnek, I. Gr. Pagonakis, T. Rzesnicki, "Development and optimization of an inverse magnetron injection gun for future fusion gyrotrons", *4th ITG (VDE) International Vacuum Electronics Workshop*,13-14 October 2014, Bad Honnef, Germany. https://www.vde.com/de/veranstaltungen/veranstaltungsuebersicht/veranstaltung-detailseite?id=7643&type=vde%7Cvdb

78. Chuanren Wu, K. A. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, I. Gr. Pagonakis, M. Thumm, "Initial steps towards multi-stage collectors for gyrotron", *4th ITG (VDE) International Vacuum Electronics Workshop*,13-14 October 2014, Bad Honnef, Germany. https://www.vde.com/de/veranstaltungen/veranstaltungsuebersicht/veranstaltung-detailseite?id=7643&type=vde%7Cvdb

79. M. Schmid, J. Franck, K. A. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, P. Kalaria, I. Gr. Pagonakis, T. Rzesnicki, M. Thumm, "Gyrotron development at KIT: FULGOR test facility and gyrotron concepts for DEMO", *28th Symposium on Fusion Technology (SOFT 2014),* 29 September - 3 October 2014, San Sebastian, Spain.

80. I. Gr. Pagonakis, F. Albajar, S. Alberti, K. Avramidis, T. Bonicelli, A. Bruschi, J. Chelis, F. Cismondi, G. Gantenbein, V. Hermann, K. Hesch, J.-P. Hogge, J.Jelonnek, J. Jin, S. Illy, Z. C. Ioannidis, G. P. Latsas, F. Legrand, M. Lontano, B. Piosczyk, Y. Rozier, T. Rzesnicki, M.

Thumm, I. G. Tigelis, M. Q. Tran, J. L. Vomvoridis, "Status of the development of the EU-1 MW gyrotron for ITER", *28th Symposium on Fusion Technology (SOFT 2014),* 29 September - 3 October 2014, San Sebastian, Spain.

81. A. Schlaich, Ch. Wu, I. Pagonakis, K. Avramidis, S. Illy, G. Gantenbein, J. Jelonnek, and M. Thumm, "Separation of thermal expansion and beam charge neutralization effects in high power 140 GHz CW gyrotrons", *41st IEEE International Conference on Plasma Science and 20th International Conference on High-Power Particle Beams* (*ICOPS/BEAMS 2014*), 25 - 29 May 2014, Washington DC, USA. https://doi.org/10.1109/PLASMA.2014.7012317
82. S. Illy, K. Avramidis, G. Gantenbein, K. Hesch , J. Jelonnek, J. Jin, I. Pagonakis, B. Piosczyk, T. Rzesnicki, M. Thumm, S. Alberti, J.-P. Hogge, M. Q. Tran, V. Hermann, F. Legrand, Y. Rozier, J. L. Vomvoridis, Z. C. Ioannidis, G. P. Latsas, I. G. Tigelis, F. Albajar, T. Bonicelli, F. Cismondi, "Progress on the development of the EU-1 MW gyrotrons for ITER", *41st IEEE International Conference on Plasma Science and 20th International Conference on High-Power Particle Beams* (*ICOPS/BEAMS 2014*), 25 - 29 May 2014, Washington DC, USA. https://doi.org/10.1109/PLASMA.2014.7012314
83. *K. A. Avramidis, T.-M. Tran, S. Brunner, C. Wu, S. Alberti, J. Jelonnek, "Studies on boundary conditions for gyrotron interaction modelling", *41st IEEE International Conference on Plasma Science and 20th International Conference on High-Power Particle Beams* (*ICOPS/BEAMS 2014*), 25 - 29 May 2014, Washington DC, USA. https://doi.org/10.1109/PLASMA.2014.7012547
84. G. Gantenbein, F. Albajar, K. Avramidis, A. Brushi, F. Cismondi, J.-P. Hogge, S. Illy, J. Jelonnek, J. Jin, I. Gr. Pagonakis, Y. Rozier, T. Rzesnicki, A. Schlaich, M. Thumm, I. G. Tigelis, "Status and progress of the European ITER gyrotron development at KIT", *EC-18, 18th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating,* 22-25 April 2014, Nara, Japan.
85. J. Jelonnek, K. A. Avramidis, J. Franck, G. Gantenbein, K. Hesch, S. Illy, J. Jin, A. Malygin, I. Gr. Pagonakis, T. Rzesnicki, A. Samartsev, A. Schlaich, T. Scherer, D. Strauss, M. Thumm, J. Zhang, "From W7-X towards a gyrotron design for DEMO: Ongoing research and development at KIT", *EC-18, 18th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating,* 22-25 April 2014, Nara, Japan.
86. I.Gr. Pagonakis, F. Albajar, S. Alberti, K. Avramidis, T. Bonicelli, A. Bruschi, F. Cismondi, I. Chelis, O. Dumbrajs, G. Gantenbein, J.-P. Hogge, S. Illy, Z. Ioannidis, J. Jelonnek, J. Jin, M. Lontano, B. Piosczyk, Y. Rozier, T. Rzesnicki, "The status of EU- 1 MW 170 GHz gyrotron for ITER", *US-EU-JPN RF Heating Technology Workshop*, 9-11 September 2013, Speyer, Germany.
87. M. Thumm, I.G. Tigelis, Q.-M. Tran, J. L. Vomvoridis M. Cordova, C. Wu, K. Avramidis, S. Illy, J. Jelonnek, "Thermo-mechanical study of the cavity deformation in the case of the 1 MW, 140 GHz CW gyrotron for W7-X", *US-EU-JPN RF Heating Technology Workshop*, 9-11 September 2013, Speyer, Germany.
88. J. Jelonnek, K. Avramidis, J. Franck, G. Gantenbein, K. Hesch, S. Illy, J. Jin, A. Malygin, I. Pagonakis, T. Rzesnicki, A. Samartsev, T. Scherer, A. Schlaich, M. Schmid, D. Strauss, M. Thumm[1], J. Zhang, "Status, progress and future plans of EC RF Source development at KIT", *US-EU-JPN RF Heating Technology Workshop*, 9-11 September 2013, Speyer, Germany.
89. I. Gr. Pagonakis, S. Illy, T. Rzesnicki, B. Piosczyk, K. Avramidis, M. Thumm, G. Gantenbein, J. Jelonnek, J.-P. Hogge, S Alberti, "A gun design criterion to limit the effects of the electron beam halo in gyrotrons", *19th IEEE Pulsed Power Conference (PPC) and the 40th IEEE International Conference on Plasma Science (ICOPS 2013)*, 16-21 June 2013, San Francisco, CA, USA. https://doi.org/10.1109/PLASMA.2013.6635123
90. J. Jelonnek, G. Gantenbein, K. Hesch, J. Jin, I. Gr. Pagonakis, B. Piosczyk, T. Rzesnicki,

M. Thumm, S. Alberti, J.-P. Hogge, M. Q. Tran, V. Erckmann, H. Laqua, G. Michel, P. Benin, F. Legrand, Y. Rozier, K. Avramidis, J. L. Vomvoridis, Z. C. Ioannidis, G. P. Latsas, I. G. Tigelis, F. Albajar, T. Bonicelli, F. Cismondi, "From series production of gyrotrons for W7-X towards EU-1 MW gyrotrons for ITER", *19th IEEE Pulsed Power Conference (PPC) and the 40th IEEE International Conference on Plasma Science (ICOPS 2013)*, 16-21 June 2013, San Francisco, CA, USA. https://doi.org/10.1109/PLASMA.2013.6635225

91. I. Gr. Pagonakis, K. A. Avramides, S. Illy, B. Piosczyk, S. Kern, J.-P. Hogge, and J. Jelonnek, "Numerical study of the effects of the magnetic axis misalignment in the EU coaxial cavity gyrotron for ITER", *39th IEEE International Conference on Plasma Science (ICOPS 2012)*, 8-12 July 2012, Edinburgh, UK, 1P-4. https://doi.org/10.1109/PLASMA.2012.6383331

92. S. Kern, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, I. Pagonakis, B. Piosczyk, T. Rzesnicki, M. Thumm, J.-P. Hogge, S. Alberti, M. Q. Tran, K. Avramides, I. Tigelis, "EU gyrotron development for ITER: Recent achievements and experimental results of the coaxial 2 MW gyrotron", *39th IEEE International Conference on Plasma Science (ICOPS 2012)*, 8-12 July 2012, Edinburgh, UK, 4B-1 https://doi.org/10.1109/PLASMA.2012.6383938

93. Z. C. Ioannidis, G. P. Latsas, I. G. Tigelis, and K. A. Avramides, "Parametric study on the ohmic loading of the 170-GHz 2-MW EU coaxial gyrotron cavity", *38th IEEE International Conference on Plasma Science (ICOPS 2011)*, 26-30 June 2011, Chicago, IL, USA, Poster IP1J-3. https://doi.org/10.1109/PLASMA.2011.5993111

94. S. Kern, A. Roy Choudhury, D. D'Andrea, A. Schlaich, K. Avramides, and S. Alberti "Recent advances in gyrotron interaction simulations", *Russian-German Workshop on ECRH and Gyrotrons 2011*, 8 April 2011.

95. S. Kern, K. A. Avramides, A. Roy Choudhury, E. Borie, G. Gantenbein, S. Illy, A. Samartsev, A. Schlaich, and M. Thumm, "Different types of after cavity interaction in gyrotrons", *US-EU-JPN RF Heating Technology Workshop*, 13-15 September 2010, Como, Italy.

96. L. Porte, S. Alberti, F. Albajar, K. A. Avramides, P. Benin, W. Bin, T. Bonicelli, A. Bruschi, S. Cirant, E. Droz, O. Dumbrajs, D. Fasel, F. Gandini, T. Goodman, J.-P. Hogge, S. Illy, S. Jawla, J. Jin, S. Kern, C. Lievin, B. Marlétaz, Ph. Marmillod, I. Pagonakis, A. Perez, B. Piosczyk, T. Rzesnicki, U. Siravo, M. Thumm, M. Q. Tran, "Testing and development of a 2MW/170GHz coaxial-cavity gyrotron for ITER in the CRPP gyrotron test stand", *5th IAEA Technical meeting on ECRH Physics and Technology for Large Fusion Devices*, 18-20 February 2009, ITER-India, Institute for Plasma Research, Gandhinagar, India.

97. B. Piosczyk, S. Alberti, F. Albajar, K. Avramidis, P. Benin, T. Bonicelli, S. Cirant, O. Dumbrajs, D. Fasel, J. Flamm, G. Gantenbein, T. Goodman, J.-P. Hogge, S. Illy, S. Jawla, J. Jin, S. Kern, C. Lievin, I. Pagonakis, O. Prinz, T. Rzesnicki, M. Thumm, and M.Q. Tran, "Status of the European 2 MW, 170 GHz coaxial cavity gyrotron for ITER", *7th International Workshop "Strong Microwaves: Sources and Applications"*, 27 July –2 August 2008, Nizhny Novgorod, Russia.

98. *K. A. Avramides, J. L. Vomvoridis, S. Kern, and I. G. Pagonakis, "Electron-beam modeling in gyrotron interaction simulations", *35th IEEE International Conference on Plasma Science (ICOPS 2008)*, 15-19 June 2008, Karlsruhe, Germany, IEEE Conference Records-Abstracts, 2P9, pp. 249-249. https://doi.org/10.1109/PLASMA.2008.4590839

99. S. Alberti, F. Albajar, K. A. Avramides, P. Benin, T. Bonicelli, S. Cirant, E. Droz, O. Dumbrajs, D. Fasel, T. Goodman, J.-P. Hogge, S. Illy, S. K. Jawla, J. Jin, S. Kern, C. Liévin, B. Marlétaz, P. Marmillod, I. G. Pagonakis, A. Perez, B. Piosczyk, L. Porte, T. Rzesnicki, U. Siravo, M. Thumm, and M. Tran, "Status of development of the 2 MW, 170 GHz coaxial-cavity gyrotron for ITER", *35th IEEE International Conference on Plasma Science (ICOPS 2008),* 15-19 June 2008, Karlsruhe, Germany, IEEE Conference Records-Abstracts, 2B3, pp. 199-199. https://doi.org/10.1109/PLASMA.2008.4590755

100. I. G. Pagonakis, S. Alberti, J.-P. Hogge, K. A. Avramides, and B. Piosczyk, “Preliminary numerical study of the beam neutralization effect in the EU 170 GHz, 2 MW coaxial gyrotron”, *35th IEEE International Conference on Plasma Science (ICOPS 2008)*, 15-19 June 2008, Karlsruhe, Germany, IEEE Conference Records-Abstracts, 2P8, pp. 248-248. https://doi.org/10.1109/PLASMA.2008.4590838

101. M. F. Silva, S. Alberti, J. Ansermet, K. A. Avramides, G. Bodenhausen, J.-P. Hogge, I. G. Pagonakis, and D. Wagner, “Design of a low-power high-frequency gyrotron for DNP-enhanced NMR spectroscopy”, *35th IEEE International Conference on Plasma Science (ICOPS 2008),* 15-19 June 2008, Karlsruhe, Germany, IEEE Conference Records-Abstracts, 2P15, pp. 252-252. https://doi.org/10.1109/PLASMA.2008.4590845

102. Y. Kominis, K. Hizanidis, O. Dumbrajs, K. A. Avramides, and J. L. Vomvoridis, “Canonical perturbation theory for time-aperiodic Hamiltonian systems and applications”, *Dynamics Days*, 25-28 July 2005, Berlin, Germany.

Ο αστερίσκος (*) υποδηλώνει τις εργασίες που παρουσιάστηκαν από τον Κ. Α. Αβραμίδη.

6.3 Συμμετοχή σε Χρηματοδοτούμενα Ερευνητικά Προγράμματα

2022 – σήμερα Ερευνητής στο πλαίσιο των πακέτων εργασίας *Work Package Heating and Current Drive (WPHCD)* και *Work Package Wendelstein 7-X (WPW7X)*, συγχρηματοδοτούμενα από την ευρωπαϊκή κοινοπραξία για τη σύντηξη (EUROfusion).

2021 – σήμερα Ερευνητής στο πλαίσιο του έργου *Enabling Research Project (ENR-TEC.01.KIT) "New generation of megawatt-class fusion gyrotron systems based on highly efficient operation at the second harmonic of the cyclotron frequency"*, συγχρηματοδοτούμενο από το EUROfusion.

2014 - 2021 Αναπληρωτής Επικεφαλής Ερευνητικής Περιοχής (Deputy Task Area Leader) στο πλαίσιο του πακέτου εργασίας *Work Package Heating and Current Drive (WPHCD)*, συγχρηματοδοτούμενο από το EUROfusion.

2019 – 2021 Συντονιστής Έργου (Task Coordinator) για όλη την συμμετοχή του Ινστιτούτου IHM του Ινστιτούτου Τεχνολογίας Καρλσρούης (KIT) στα πακέτα εργασίας *Work Package Stellarator 1 (WPS1)* και *Work Package Wendelstein 7-X (WPW7X)*, συγχρηματοδοτούμενα από το EUROfusion.

2012 – 2021 Κύριος Ερευνητής, ως συμμετέχων στην ευρωπαϊκή κοινοπραξία γυροτρονίου (European Gyrotron Consortium, EGYC), για το έργο που σχετίζεται με την αλληλεπίδραση ηλεκτρονίων και υψίσυχνων κυμάτων, στο πλαίσιο των συμφωνιών επιχορήγησης F4E-GRT-432 και F4E-GRT-553 της EGYC από την Ευρωπαϊκή Κοινή Επιχείρηση για το ITER (Fusion for Energy, F4E), που αποσκοπούν στην ανάπτυξη του ευρωπαϊκού γυροτρονίου για το ITER.

2016 – 2019 Μέλος της τριμελούς εποπτεύουσας επιτροπής (Project Lead) του προγράμματος *Grant GZ: JE 711/1-1, "DFG-RSF: Generation of Ultrashort Pulses in Millimeter and Submillimeter Bands for Spectroscopy and Diagnostic of Various Media Based on Passive Mode-locking in Electronic Devices with Nonlinear Cyclotron Absorber in the Feedback Loop"*, που χρηματοδοτήθηκε από το Γερμανικό Ίδρυμα Ερευνών (Deutsche Forschungsgemeinschaft, DFG).

2009 – 2012 Ερευνητής στο έργο που σχετίζεται με τον σχεδιασμό κυλινδρικού γυροτρονίου 170 GHz για το ITER, με την έρευνα σχετικά με παρασιτικές ταλαντώσεις στο γυροτρόνιο και με τη βελτίωση των κωδικών προσομοίωσης αλληλεπίδρασης ηλεκτρονίων-κύματος, στο πλαίσιο των συμφωνιών επιχορήγησης F4E-2008-GRT-08 (PMS-H.CD)-01 και F4E-2009-GRT-049-01 της EGYC από το F4E, που αποσκοπούν στην ανάπτυξη του ευρωπαϊκού γυροτρονίου για το ITER.

2009 Συμβολή στην αξιολόγηση του ετήσιου Σχολείου *Φυσικής και Τεχνολογίας Σύντηξης* που διοργανωνόταν στο Βόλο (2002-2011) από το ΕΠΕΘΣ, στο πλαίσιο της συμμετοχής του ΕΜΠ στο Ευρωπαϊκό Δίκτυο Εκπαίδευσης Σύντηξης (FUSENET).

2001 – 2012 Θεωρητικές μελέτες και ανάπτυξη αριθμητικών κωδίκων σχετικών με την αλληλεπίδραση ηλεκτρονίων-κυμάτων και το σχεδιασμό συμβατικών, ομοαξονικών και αρμονικών γυροτρονίων υψηλής ισχύος, στο πλαίσιο του ΕΠΕΘΣ, συγχρηματοδοτούμενες από την Ένωση EURATOM - Ελληνική Δημοκρατία, Σύμβαση ERB 5005 CT 99 0100 (συμπεριλαμβανομένων και των τροποποιήσεών της).

1999 – 2001 Θεωρητικές μελέτες και ανάπτυξη αριθμητικών κωδίκων στο πλαίσιο του προγράμματος *Studies on High-Frequency, High-Power Coaxial-Cavity Gyrotrons at the Fundamental and Second Cyclotron Harmonics* που πραγματοποιήθηκε με συνεργασία του ΕΜΠ με το Ερευνητικό Κέντρο Καρλσρούης (Forschungszentrum Karlsruhe, Γερμανία) και συγχρηματοδοτήθηκε από την EURATOM μέσω της σύμβασης ERB 5004 CT 98 0019.

Παραδοτέα και Εκθέσεις Πεπραγμένων

- ***EUROfusion***

1. Από το 2014 έως το 2021, συμμετοχή σε όλα τα παραδοτέα του Ινστιτούτου IHM του Ινστιτούτου Τεχνολογίας Καρλσρούης (KIT), καθώς και γενική επιμέλειά τους, τα οποία αναφέρονται στο πακέτο εργασίας *WPHCD.* https://idm.euro-fusion.org/IDM/Pages/DocumentSystem.aspx?uid=2M8LY5; password available upon request.
2. Από το 2019 έως το 2021, συμμετοχή σε όλα τα παραδοτέα του Ινστιτούτου IHM του Ινστιτούτου Τεχνολογίας Καρλσρούης (KIT), καθώς και γενική επιμέλειά τους, τα οποία αναφέρονται στα πακέτα εργασίας *WPS1* και *WPW7X.* https://idm.euro-fusion.org/IDM/Pages/DocumentSystem.aspx?uid=2MDZTA; password available upon request.

- ***Fusion for Energy***

1. Κύριος συγγραφέας του παραδοτέου *Intermediate Deliverable #8.03,"Status of beam-wave interaction modelling at the cavity",* Grant Agreement F4E-GRT-553, March 2017.
2. Κύριος συγγραφέας του παραδοτέου *Final Deliverable #4.3, "Code improvements for wave-beam interactions"* και συμμετοχή στα παραδοτέα *Final Report on Tasks 2.1, 2.2, 2.5,* του Grant Agreement "Design and Development of the European Gyrotron Ref. N°: F4E-GRT-432", 2014.
3. Συμμετοχή στα παραδοτέα *Final Report on Tasks 2.3, 3.2, 4*, Grant Agreement "Design and Development of the European Gyrotron ('CCGDS7') Ref. N°: F4E-2009-GRT-049-01", 2012.
4. Κύριος συγγραφέας του παραδοτέου *Final Report on Task 3.4* και συμμετοχή στα παραδοτέα *Final Report on Tasks 3.2, 5.1, 5.2* του Grant Agreement "Development of the European Gyrotron ('CCGDS6') Ref. N°: F4E-2008-GRT-08 (PMS-H.CD)", 2010.

- ***Άλλα συγχρηματοδοτούμενα προγράμματα***

1. S. Kern, K. Avramides, O. Dumbrajs, G. Gantenbein, S. Illy, Y.-H. Liu, Y. Pagonakis, O. Prinz, and M. Thumm, "European development of a gyrotron for ITER: Design and analysis, and support to the industrial contracts", Final Report on EFDA REFERENCE: TW6-THHE-CCGDS5, D2a/c, Association EURATOM – FZK, February 2008.
2. C. T. Iatrou, K. A. Avramides, and J. L. Vomvoridis, "Studies on high-frequency, high-power coaxial-cavity gyrotrons at the fundamental and second cyclotron harmonics", Final Report, Fixed contribution programme ERB 5004 CT 98 0019 (EAEC-EC, NTUA), NTUA, SECE, December 2001.

- ***Παρατήματα στις Ετήσιες Εκθέσεις Πεπραγμένων του Εθνικού Προγράμματος Ελεγχόμενης Θερμοπυρηνικής Σύντηξης***
(www.hellasfusion.gr)

1. K. A. Avramides, G. E. Anastassiou, J. Chelis, Z. C. Ioannidis, G. P. Latsas, M. Moraitou, D. Peponis, I. G. Tigelis, and J. L. Vomvoridis, "High-power microwave generation towards DEMO: Assessment of the current status and of the roadmap for further development of numerical tools, modelling, and innovative concepts (Task Agreement WP11-DAS-HCD-EC2)", Association EURATOM-Hellenic Republic, Annual Report 2011, Annex 14.
2. K. A. Avramides, I. Gr. Pagonakis, A. V. Malygin, S. Alberti, and S. Kern, "Recent improvements and extensions of the code-package EURIDICE", Association EURATOM-Hellenic Republic, Annual Report 2011, Annex 15.
3. Z. C. Ioannidis, K. A. Avramides, I. G. Tigelis, and D. J. Frantzeskakis, "SIM correction for Ohmic losses calculation in coaxial corrugated cavities", Association EURATOM-Hellenic Republic, Annual Report 2011, Annex 17.
4. K. A. Avramides, S. Kern, S. Alberti, and I. Gr. Pagonakis, "Report on further verification of the code-package EURIDICE through comparison with existing codes", Association EURATOM-Hellenic Republic, Annual Report 2010, Annex 17.
5. Z. C. Ioannidis, K. Avramides, S. Kern, G. P. Latsas, I. G. Tigelis, and D. Frantzeskakis, "The effect of higher order spatial harmonics on the spectrum of a coaxial cavity/waveguide with a corrugated insert", Association EURATOM-Hellenic Republic, Annual Report 2010, Annex 20.
6. K. A. Avramidis, S. Kern, and J. L. Vomvoridis, "Recent improvements of the self-consistent interaction code in the code-package EURIDICE", Association EURATOM-Hellenic Republic, Annual Report 2009, Annex 16.
7. K. A. Avramidis and I. Gr. Pagonakis "On the effect of the approximations used in gyrotron interaction calculations", Association EURATOM-Hellenic Republic, Annual Report 2009, Annex 17.
8. K. A. Avramides, J. L. Vomvoridis, S. Kern, and I. Gr. Pagonakis, "Electron-beam modelling in gyrotron interaction simulations", Association EURATOM-Hellenic Republic, Annual Report 2008, Annex 21.
9. K. A. Avramides, O. Dumbrajs, S. Kern, I. Gr. Pagonakis, and J. L. Vomvoridis, "Mode selection for a 170 GHz, 1 MW gyrotron for ITER", Association EURATOM-Hellenic Republic, Annual Report 2008, Annex 22.
10. K. A. Avramides, I. Gr. Pagonakis, B. Piosczyk, and J. L. Vomvoridis, "Possible excitation of radial satellites in high-power gyrotrons", Association EURATOM-Hellenic Republic, Annual Report 2007, Annex XVIII.
11. K. A. Avramides, "Alternative coaxial inserts for the interaction cavity of the European 170 GHz coaxial gyrotron for ITER", Association EURATOM-Hellenic Republic, Annual Report 2007, Annex XIX.
12. I. Gr. Pagonakis, J-P. Hogge, S. Alberti, K. A. Avramides, and J. L. Vomvoridis, "A depressed collector for a gyrotron e-beam with efficiency near 100 %", Association EURATOM-Hellenic Republic, Annual Report 2007, Annex XX.
13. K. A. Avramides, C. T. Iatrou, and J. L. Vomvoridis, "Systematic procedure for operating-mode selection in conventional and coaxial-cavity gyrotrons", Association EURATOM-Hellenic Republic, Annual Report 2006, Annex VI.
14. Y. Kominis, K. Hizanidis, K. A. Avramides, J. L. Vomvoridis, and O. Dumbrajs, "Use of Lie transform perturbation theory for higher order calculation of the perpendicular efficiency of a

gyrotron cavity", Association EURATOM-Hellenic Republic, Annual Report 2006, Annex VII.

15. K. A. Avramides, J. L. Vomvoridis, and C. T. Iatrou, "Coaxial gyrotron cavities with resistive corrugated insert for powerful second-harmonic operation", Association EURATOM-Hellenic Republic, Annual Report 2005, Annex VII.
16. Y. Kominis, O. Dumbrajs, K. A. Avramides, K. Hizanidis, and J. L. Vomvoridis, "Hysteresis-like effects of electron dynamics in gyrotrons: Analytical results", Association EURATOM-Hellenic Republic, Annual Report 2005, Annex VIII.
17. Y. Kominis, O. Dumbrajs, K. A. Avramides, K. Hizanidis, and J. L. Vomvoridis, "Hamiltonian map description of electron dynamics in gyrotrons", Association EURATOM-Hellenic Republic, Annual Report 2005, Annex IX.
18. K. A. Avramides, "Effects of the beam-energy spread on the ITER gyrotron cavity", Association EURATOM-Hellenic Republic, Annual Report 2004, Annex VI.
19. K. A. Avramides, J. L. Vomvoridis, and C. T. Iatrou, "Second-harmonic operation of coaxial gyrotrons: Towards a proof-of-principle experiment", Association EURATOM-Hellenic Republic, Annual Report 2004, Annex VII.
20. Y. Kominis, O. Dumbrajs, K. A. Avramides, K. Hizanidis and J. L. Vomvoridis, "Chaotic electron dynamics in gyrotron resonators", Association EURATOM-Hellenic Republic, Annual Report 2004, Annex VIII.
21. Y. Kominis, O. Dumbrajs, K. A. Avramides, K. Hizanidis and J. L. Vomvoridis, "Complex electron dynamics in gyrotrons under resonant interaction at higher harmonics of the electron cyclotron frequency", Association EURATOM-Hellenic Republic, Annual Report 2004, Annex IX.
22. K. A. Avramides, "Competing modes in the coaxial cavity of the gyrotron for ITER", Association EURATOM-Hellenic Republic, Annual Report 2003, Annex V.
23. K. A. Avramides, C. T. Iatrou, and J. L. Vomvoridis, "Design considerations for powerful continuous-wave second-cyclotron-harmonic coaxial-cavity gyrotrons", Association EURATOM-Hellenic Republic, Annual Report 2003, Annex VI.
24. K. A. Avramides, J. L. Vomvoridis, and C. T. Iatrou, "Beam-field interaction in a coaxial gyrotron cavity and numerical code", Association EURATOM-Hellenic Republic, Annual Report 2002, Annex III.
25. C. T. Iatrou, K. A. Avramides, and J. L. Vomvoridis, "High-frequency, high-power coaxial-cavity gyrotrons at the fundamental and second cyclotron harmonics", Association EURATOM-Hellenic Republic, Annual Report 2001, Annex IV.

6.4 Πρόσθετη Επιστημονική Δραστηριότητα

- Κριτής των επιστημονικών περιοδικών
  - AIP Physics of Plasmas
  - IEEE Electron Device Letters
  - IEEE Transactions on Electron Devices
  - IEEE Transactions on Microwave Theory and Techniques
  - IEEE Transactions on Plasma Science
  - IEEE Transactions on Terahertz Science and Technology
  - International Journal of Infrared and Millimeter Waves
  - Journal of Fusion Energy
  - VACUUM
  - VGTU Mathematical Modelling & Analysis

7. Συστάσεις

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