

Part of the work of the Association has appeared (or, has been accepted for publication) in scientific journals and conferences during year 2012. These publications are presented in the following list (in alphabetical order, by the name of the first author, with underlined the names of personnel affiliated with the Research Unit): [cialis kaufen](#) [kamagra brausetabletten](#) argaiv1452

- [1] X. Albets-Chico, H. Rhadakrishnan, and S. Kassinos, "Full MHD solution of liquid-metal flow in an insulating pipe subjected to a strong fringing magnetic field", *Fusion Science and Technology* 61, 1 (2012).
- [2] G. Apostolopoulos, K. Mergia, S. Messoloras, and E. Devlin, "A novel method for unravelling Mössbauer spectra of short-range ordered Fe-Cr alloys", *20th Workshop on Fe-Cr alloys*, Rouen, France, May 8-11 2012.
- [3] K. A. Avramidis, I. Gr. Pagonakis, C. T. Iatrou, and J. L. Vomvoridis, "EURIDICE: A code-package for gyrotron interaction simulations and cavity design", *17th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 7-11 May 2012, Deurne, The Netherlands,
EPJ Web of Conferences
32, pp 04016.
- [4] K. A. Avramidis, A. K. Ram, O. Dumbrajs, S. Alberti, and S. Kern, "On the numerical scheme employed in gyrotron interaction simulations", *17th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 7-11 May 2012, Deurne, The Netherlands,
EPJ Web of Conferences
32, pp. 04017.
- [5] I. Chatziantonaki, C. Tsironis, H. Isliker, and L. Vlahos, "Effect of magnetic island geometry on ECRH/ECCD and consequences to the NTM stabilization dynamics", *17th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 7-11 May 2012, Deurne, The Netherlands,
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32, pp. 01013.

[6] T. Bolzonella, S. Benkadda, I. Chapman, P. De Vries, T. Fujita, M. Furukawa, G. Giruzzi, S. C. Guo, S. Ide, A. Isayama, E. Joffrin, Y. Kamada, A. Lazaros, Y. Liu, G. Matsunaga, D. Mazon, P. Moreau, S. Nowak, G. Pautasso, O. Sauter, J. Shiraishi, C. Sozzi, M. Takechi, Z. R.Wang, JT-60SA Research Plan Contributors and JT-60SA Team, " Recent studies in support to MHD stability and control on JT-60SA",
Proceedings of Joint EPS-ICPP Plasma Physics Conference 2012,
Stockholm.

[7] J. G. Chelis and J. L. Vomvoridis, "Electromagnetic modelling of dielectric loaded aperiodic gyrotron beam tunnels", *17th Joint Workshop on Electron Cyclotron Emission and Electron Cyclotron Resonance Heating*, 7-11 May 2012, Deurne, The Netherlands, P2-13, Conference Proceedings, pp. 04018.

[8] D. Dimopoulos and N. Pelekasis, "Magnetic field effects on three dimensional stability of natural convection flows in differentially heated cavities", *23rd International Congress of Theoretical and Applied Mechanics*, 9 - 24 August 2012, Beijing, China, 2012.

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[9] D. Dimopoulos and N. Pelekasis, "Three dimensional stability of free convection vortices in the presence of a magnetic field", *Journal of Fluid Dynamic Research* 44, 365 (2012).

[10] C. D. Dritselis, A. J. Iatridis, I. E. Sarris, and N. S. Vlachos, "Buoyancy-assisted mixed convection in a vertical channel with spatially periodic wall temperature", *Int. J. of Thermal Sciences* 65, 28 (accepted in 2012).

[11] K. Hizanidis, A. K. Ram, Y. Kominis, C. Tsironis, and P. Zestanakis, "Scattering of radio frequency waves by edge fluctuations", *39th EPS Conference & 16th Int. Congress on Plasma Physics*, Stockholm, 2012.

[12] A. J. Iatridis, C. D. Dritselis, I. E. Sarris, and N. S. Vlachos, "Transient laminar MHD natural convection cooling in a vertical cylinder", *Numerical Heat Transfer, Part A: Applications* 62, 531 (2012).

- [13] A. I. Iatridis, I. E. Sarris, and N. S. Vlachos, "Transition of an electromagnetically driven liquid metal flow from laminar to turbulent in a toroidal square duct", *Europhysics Letters* 101, 44005 (2012).
- [14] Z. C. Ioannidis, I. G. Tigelis, I. Gr. Pagonakis, S. Illy, and M. Schmid, "The eddy current effect on the transversal sweeping system of a gyrotron collector", *ICOPS 2012*, 8–12 July 2012, Edinburg, UK.
- [15] H. Isliker, I. Chatziantonaki, C. Tsironis, and L. Vlahos, "Electron-cyclotron wave propagation, absorption and current drive in the presence of neoclassical tearing modes", *Plasma Phys. Control. Fusion* 54, 095005 (2012).
- [16] J. Jelonnek, S. Alberti, K. A. 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.
- [17] 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. A. Avramidis, and 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.
- [18] S. Kern, J.-P. Hogge, S. Alberti, K. A. Avramidis, G. Gantenbein, S. Illy, J. Jelonnek, J. Jin, I. Gr. Pagonakis, B. Piosczyk, T. Rzesnicki, M. K. Thumm, I. Tigelis, M. Q. Tran, 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*, 04009.

- [19] Y. Kominis, A. K. Ram, and K. Hizanidis, "Interaction of charged particles with localized electrostatic waves in a magnetized plasma", Phys. Rev. E 85, 016404 (2012).
- [20] Y. Kominis, A. Papadopoulos, K. Hizanidis, P. Zestanakis, and A. K. Ram, "Kinetic formulation of wave-particle interaction with coherent radio frequency waves", *39th IEEE International Conference on Plasma Science (ICOPS 2012)*, 8-12 July 2012, Edinburgh, UK.
- [21] Z. Kotsina, G. Apostolopoulos, K. Mergia; S. Messoloras; A. Lagogiannis, and S. Harissopoulos, "Inversion of the electrical resistivity behavior during irradiation of Fe- Cr alloys at 400 K", *3rd Workshop on nuclear Fe alloys: modelling and experiments*, Alicante, Spain, October 28-31, 2012.
- [22] Z. Kotsina, G. Apostolopoulos, K. Mergia, S. Messoloras, A. Lagogiannis, and S. Harissopoulos, "Radiation damage studies of Fe-Cr alloys for Fusion applications", XXVIII Greek Conference in Condensed Matter Physics and Materials Science, Patras, Greece, 2012.
- [23] Ap. Kuiroukidis and G. N. Throumoulopoulos, "Analytic tokamak equilibria with non-field aligned flows", *39th EPS Conference & 16th Int. Congress on Plasma Physics*, Stockholm, Sweden, 2-6 July 2012, Conference Proceedings, P5.036, 2012.
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- [25] Ap. Kuiroukidis and G. N. Throumoulopoulos, "Symmetric and asymmetric equilibria with non-parallel flows", Phys. Plasmas 19, 022508 (2012).
- [26] M. Yu. Lavrentiev, K. Mergia, M. Gjoka, D. Nguyen-Manh, G. Apostolopoulos, and S. L. Dudarev, "Magnetic cluster expansion simulation and experimental study of high-temperature

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[28] A. Malygin, S. Illy, I. Pagonakis, B. Piosczyk, S. Kern, J. Weggen, M. Thumm, K. Avramidis, L. Ives, and 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.

[29] J. T. Mendonca and K. Hizanidis, “Wave propagation through a moving plasma perturbation in a relativistic plasma”, Plasma Phys. Control Fusion, 54, 035006 (2012).

[30] S. Misdanitis, S. Pantazis, and D. Valougeorgis, “Pressure driven rarefied gas flow through a slit and an orifice”, Vacuum 86, 1701 (2012). [31] S. Misdanitis, D. Valougeorgis, “Modelling of ITER related vacuum gas pumping distribution systems”, *27th Symposium on Fusion Technology*, 24 – 26 September 2012, Liege, Belgium, 2012.

[32] M. D. Moraitou, Z. C. Ioannidis, G. P. Latsas, and I. G. Tigelis, “Parametric study of the beam tunnel of the European 2 MW, 170 GHz coaxial cavity gyrotron for ITER”, *ICOPS 2012*, 8 –12 July 2012, Edinburg, UK.

[33] M. Moraitou, “Study of electromagnetic waves properties in coaxial gyrotron beam tunnels”, PhD Thesis (in Greek), 2012.

[34] S. Naris and D. Valougeorgis, “Design and optimization of a Holweck pump via linear kinetic theory”, Journal of Physics: Conference Series 362, 012024 (2012).

- [35] I. Gr. Pagonakis, K. A. Avramidis, 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.
- [36] S. Pantazis, S. Naris, C. Tantos, D. Valougeorgis, J. Andre, F. Millet, and J. P. Perin, "Nonlinear vacuum gas flow through a short tube due to pressure and temperature gradients", *7th Symposium on Fusion Technology*, 24 – 26 September 2012, Liege, Belgium, 2012.
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- [41] A. Papadopoulos, Y. Kominis, K. Hizanidis, and A. K. Ram, "Wave-particle interactions in toroidally confined fusion plasmas", *54th Annual Meeting of the APS Division of Plasma Physics*, November 2012.
- [42] G. Poulopoulos, G. Throumoulopoulos, C. Konz, and EFDA ITM-TF contributors, "Extending

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[44] A. K. Ram, K. Hizanidis, and Y. Kominis, "Scattering of waves by blobs in tokamak plasmas: venturing beyond geometric optics", A. K. Ram, 54th Annual Meeting of the APS Division of Plasma Physics, 2012. Accepted for publication in *Physics of Plasmas*.

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[46] C. Tantos, S. Naris, and D. Valougeorgis, "Rarefied gas mixture flow between plates of arbitrary length due to small pressure difference", *Journal of Physics: Conference Series* 362, 012005 (2012).

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- [51] C. Tsironis, I. K. Giannopoulos, I. Kakogiannos, and D. Kalligeropoulos, "Current developments in the control analysis and simulation of MHD stabilization in tokamak experiments", *Proc. eRA-7 International Conference*, Athens-Greece, 2012.
- [52] C. Tsironis, I. K. Giannopoulos, I. Kakogiannos, and D. Kalligeropoulos, "Simulation and control of electromagnetic wave launching in thermonuclear fusion experiments", *Proc. 14th IASTED-CA International Conference*, Heraklion-Greece, 2012.
- [53] X. Xu, D. Rouson, S. C. Kassinos, and H. Radhakrishnan, "Dispersed-phase structure in sheared MHD turbulence", *Journal of Turbulence* 13, 1 (2012).