

PD Dr. habil. Erion Gjonaj

Personal: Born, October 18, 1970; male

Institute for Accelerator Science and Electromagnetic Fields,
TU Darmstadt
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Status: Privatdozent (habilitated adjunct professor),
Group Leader, H-index: 14 (Researchgate listing)



University education and scientific degrees

- 1988 – 1994 University of Tirana and University of Siegen, Theoretical Physics;
Diploma Thesis: Wave Packet Motion and Speed of the Signal in the Resonance
Frequency Region of Dispersive Media
Supervisors: Prof. Dr. R. Meidani, Prof. Dr.phil.nat H.D. Dahmen
- 1998 Dr. rer. nat., (*summa cum laude*) University of Siegen;
Ph.D Thesis: *Quantilbewegung und Kausalität. Tunnelzeiten und -geschwindigkeiten
beim quantenmecha-nischen Tunneleffekt und bei der Ausbreitung
elektromagnetischer Signale in dispersiven Medien und Hohlleitern*
Supervisor: Prof. Dr.phil.nat. H.D. Dahmen
- 2008 Habilitation, Department of Electrical Engineering, TU Darmstadt;
Habilitation thesis: *Numerical Modeling of Coupled Electromagnetic Problems*
- 2008 *venia legendi* in “Theory of Electromagnetic Fields”, Department of Electrical
Engineering, TU Darmstadt

Professional experience

- 2008 – Privatdozent at the TU Darmstadt
- 2001 – 2008 Research Group Leader, Computational Electromagnetics Lab, TU Darmstadt
- 2000 – 2001 Technical Support Engineer, CST of America Inc., Wellesley, MA, USA
- 1999 – 2000 Postdoctoral Fellow, Computational Electromagnetics Lab, TU Darmstadt
- 1998 – 1999 Postdoctoral Fellow, Department of Physics, University of Siegen
- 1994 – 1998 Research Assistant, Department of Physics, University of Siegen
- 1994 – 1994 Research Assistant, Department of Physics, University of Tirana

Awards and memberships

- 2016 Shortlisted 2nd for a W3-Professorship “Electromagnetic Field Theory” Brandenburg
University of Technology Cottbus-Senftenberg
- 2013 Shortlisted 2nd for a W3-Professorship “Electromagnetic Field Theory” at the
University of Paderborn
- 2010 – Membership ACES – “Applied Computational Electromagnetics Society”
- 2008 – Membership U.R.S.I. Landesausschuss in der Bundesrepublik Deutschland e.V. –
Commission B: Fields and Waves
- 2007 – Membership „International COMPUMAG Society“
- 1994 – 1998 DAAD-Scholarship, Awarded by the German Ministry of Foreign Affairs
- 1993 TEMPUS Grant for undergraduate studies, Awarded by the EU Commission

Professional activities

- 2007 – Reviewer of more than 20 international journals, among others: “Journal of
Computational Physics”, “International Journal of Heat and Fluid Flow”, “IEEE
Transactions on Power Delivery”, “Journal of Scientific Computing”, “IEEE
Transactions on Magnetics”, “IEEE Antennas and Wireless Propagation Letters”,

	"Royal Society Proceedings A", "Physical Review Special Topics: Accelerator and Beams", "IEEE Transactions on Antennas and Propagation" and many others
2008 – 2010	External reviewer of the „U.S. Department of Energy, Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programme"
2008 – 2008	Reviewer of the „U.S. Department of Energy, Scientific Discovery through Advanced Computing (SciDAC) programme"
2006 –	Supervision of 6 Master Thesis and 15 PhD Thesis at the Technical University of Darmstadt
2008 –	About 15 third-party funded projects from various research foundations and industry partners

Ten important publications (out of about 180 in total)

1. T. Flisgen, E. Gjonaj, H.W. Glock, A. Tsakanian, Generalization of coupled S –parameter calculation to compute beam impedances in particle accelerators, *Physical Review Accelerators and Beams* 23(3), 2020.
2. D.A. Bizzozero, E. Gjonaj, H. De Gersem, "Modeling Coherent Synchrotron Radiation with a Discontinuous Galerkin Time-Domain Method", *J. Comp. Phys.* (IF 2.845), 2019-05-24, DOI: 10.1016/j.jcp.2019.05.029
3. Y. Chen, M. Krasilnikov, F. Stephan, E. Gjonaj, M. Dohlus, T. Weiland, „Modeling and Simulation of Photoemission Based Electron Beam Injectors for Coherent Light Sources", *Nuclear Inst. and Methods in Physics Research A*, NIMA 889C (2018), 129-137
4. K. Bane, G. Stupakov, E. Gjonaj, "Estimate of Joule Heating in a Flat Dechirper", *Phys. Rev. Accel. Beams* 20, 054403 (2017), 1-12
5. Y. Ouedraogo, E. Gjonaj, T. Weiland, H. De Gersem, C. Steinhausen, G. Lamanna, B. Weigand, A. Preusche, A. Dreizler and M. Schremb, „Electrohydrodynamic simulation of electrically controlled droplet generation", *Int. J. of Heat and Fluid Flow*, Vol. 64, April 2017, 120-128
6. E. Gjonaj and T. Weiland, "A projection penalization approach for the high-order DG-FEM in the time domain", *Radio Sci.*, Vol. 47, No. 5 (2011), RS0E10
7. E. Gjonaj and T. Weiland, "Impedance Calculation, Time Domain", in *Handbook of Accelerator Physics and Engineering* 2nd edition, Alexander Wu Chao, Karl-Hubert Mess, Maury Tigner, Frank Zimmermann (Eds.), World Scientific Publishing, 2013, ISBN: 978-981-4415-84-2
8. E. Gjonaj, T. Lau and T. Weiland, „Computation of Short Range Wake Fields with PBCI", *ICFA Beam Dynamics Newsletter*, Vol.45 (2008), 38-52
9. E. Gjonaj, T. Lau, S. Schnepp, F. Wolfheimer and T. Weiland, „Accurate Modeling of Charged Particle Beams in Linear Accelerators", *New Journal of Physics*, Vol. 8 (2006), 1-21
10. E. Gjonaj, M. Bartsch, M. Clemens, S. Schupp and T. Weiland, „High Resolution Human Anatomy Model for Advanced Electromagnetic Computations", *IEEE Trans. on Magnetics*, Vol. 38 (2002), 357-360