

Diogo Aguiam

Electronics Engineer, PhD

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EXPERIENCE

Microwave Diagnostics Developer - Invited Researcher

Max-Planck-Institut für Plasmaphysik

November 2015 – May 2018 Garching, Germany

- Installation and commissioning of microwave reflectometry diagnostics for Nuclear Fusion research
- Development of density profile reconstruction codes for distributed computing cluster

Research Engineer, PhD Student

Instituto de Plasmas e Fusão Nuclear

February 2013 – June 2018 Lisbon, Portugal

- Design and assembly of RF electronics systems
- Testing and validation of new microwave diagnostics

LabVIEW Developer

Department of Physics, Instituto Superior Técnico

February 2012 – July 2012 Oeiras, Portugal

- Development of LabVIEW interfaces for physics laboratories

Ciência Viva Monitor

INESC-ID Lisboa

June 2011 Oeiras, Portugal

- Teaching electronics and PCB fabrication to high school students

TRAINING

Radiation Safety Instruction

Max-Planck-Institut für Plasmaphysik

2015, 2016, 2017, 2018 Garching, Germany

- Working in a nuclear fusion research facility including in-vessel access

Nanotechnologies - Athens Programme

École Nationale Supérieure de Techniques Avancées

November 2011 Paris, France

- Fundamentals of nano-structures, nanophotonics, spintronics and microfabrication techniques

Hardware and signal processing engineer with a passion for building complex new systems from scratch

TECHNICAL SKILLS

C/C++
Python
PCB Design
Signal Processing
Software Engineering
MATLAB
RF



Experience with:

Altium Embedded Systems ADS
LabVIEW Cadence Xilinx FPGA
Solidworks Git Neural Networks

LANGUAGES

Portuguese
English (C2)
French (B1)
German (B1)



EDUCATION

Double Ph.D. in Physics Engineering University of Ghent & Universidade de Lisboa

2014 – 2018

Thesis: Implementation of a X-mode multichannel edge density profile reflectometer for the new ICRH antenna on ASDEX Upgrade
Pass with distinction

M.Sc. in Electronics Engineering

Instituto Superior Técnico, U. Lisboa

2011 – 2013

Thesis: Heterodyning Non Destructive Testing Electronic System Based on Eddy Currents

B.Sc. in Electronics Engineering

Instituto Superior Técnico, U. Lisboa

2008 – 2011

Best in class scholarships for three years

Journal Articles

- Aguiam, Diogo E. et al. (2018). "Estimation of X-mode reflectometry first fringe frequency using neural networks". In: *IEEE Transactions on Plasma Science*.
- Aguiam, DE et al. (2017). "X-mode raw data analysis of the new AUG ICRF antenna edge density profile reflectometer". In: *Fusion Engineering and Design*.
- Aguiam, D et al. (2017). "Overview of ASDEX Upgrade results". In: *NUCLEAR FUSION* 57.10.
- Fünfgelder, H et al. (2017). "A double success story: The international cooperation to build the new ICRF antennas on ASDEX Upgrade and the results obtained". In: *Fusion Engineering and Design*.
- Meyer, H et al. (2017). "Overview of progress in European medium sized tokamaks towards an integrated plasma-edge/wall solution". In: *Nuclear Fusion* 57.10, pp. 1–15.
- Zhang, W, W Tierens, JM Noterdaeme, et al. (2017). "Radio frequency heating induced edge plasma convection: self-consistent simulations and experiments on ASDEX Upgrade". In: *Nuclear Fusion* 57.11.
- Zhang, Wei et al. (2017). "Effects of outer top gas injection on ICRF coupling in ASDEX Upgrade: towards modelling of ITER gas injection". In: *Plasma Physics and Controlled Fusion* 59.7, p. 075004.
- Aguiam, DE et al. (2016). "Implementation of the new multichannel X-mode edge density profile reflectometer for the ICRF antenna on ASDEX Upgrade". In: *Review of Scientific Instruments* 87.11, 11E722.
- Bobkov, V, D Aguiam, M Baruzzo, et al. (2016). "Progress in reducing ICRF-specific impurity release in ASDEX upgrade and JET". in: *Nuclear Materials and Energy*.
- Bobkov, V et al. (2016b). "Making ICRF power compatible with a high-Z wall in the ASDEX Upgrade". In: *Plasma Physics and Controlled Fusion* 59.1, p. 014022.
- Aguiam, Diogo E et al. (2015). "Heterodyning based portable instrument for eddy currents non-destructive testing". In: *Measurement* 73, pp. 146–157.
- Silva, F da et al. (2015). "REFMULF: 2D Fullwave FDTD Full Polarization Maxwell Code". In:

Conference Proceedings

- Zhang, W, V Bobkov, et al. (2017). "Recent progress on improving ICRF coupling and reducing rf-specific impurities in ASDEX Upgrade". In: *22nd RF Topical Conference on Radiofrequency Power in Plasmas (RFPPC 2017)*.
- Zhang, W, D Coster, et al. (2017). "Plasma edge modelling with ICRF coupling". In: *22nd RF Topical Conference on Radiofrequency Power in Plasmas (RFPPC 2017)*.
- Bobkov, V et al. (2016a). "ICRF heating in ASDEX Upgrade with W wall". In: *International Conference and School on Plasma Physics and Controlled Fusion*.
- Noterdaeme, Jean-Marie et al. (2016). "Ion Cyclotron Range of Frequency Power Challenges and Solutions". In: *26th IAEA Fusion Energy Conference*.
- Zhang, W, W Tierens, D Aguiam, et al. (2016). "Radio frequency heating induced edge plasma convection". In: *DPG-Frühjahrstagung der Sektion Materie und Kosmos (SMuK)*. DPG.
- Aguiam, Diogo Elói, Bernardo Brotas de Carvalho, and Mário Lino da Silva (2015). "Feasibility Study of a Control System based on PLC and EPICS for the ESTHER Combustion Gas Injection". In: *Experiment@ International Conference (exp. at'15), 2015 3rd*. IEEE, pp. 22–26.
- Aguiam, Diogo E et al. (2014). "Portable instrument for eddy currents Non-Destructive Testing based on heterodyning techniques". In: *Instrumentation and Measurement Technology Conference (I2MTC) Proceedings, 2014 IEEE International*. IEEE, pp. 1368–1372.