Curriculum vitae ai fini della pubblicazione sul web

Personal Information

First Name Walter

Last Name Fuscaldo

Tax Code FSCWTR87E13H501W

Working Activities

Jan. 2018 - Today **Postdoctoral Researcher**, *Sapienza, University of Rome*, Rome, Italy.
THz far-field reconfigurability and mm-wave near-field focusing through leaky-wave radiating systems

Sep. 2017 - Dec. 2017 **Visiting Scientist**, *NATO STO - Centre for Maritime Research and Experimentation (CMRE)*, La Spezia, Italy.
Electromagnetic modeling of scattering problems for ship detection in maritime scenarios through GNSS-R.

Supervisors Paolo Braca *NATO STO - CMRE*

Sep. 2017 - Dec. 2017 **Visiting Scientist**, *NATO STO - Centre for Maritime Research and Experimentation (CMRE)*, La Spezia, Italy.
Electromagnetic modeling of scattering for ship detection in maritime scenarios through high-resolution radars.

Supervisors Paolo Braca *NATO STO - CMRE*

Mar. 2012 - May 2012 **Stage**, *ELT Elettronica S.p.A.*, Electronic Warfare, Rome, Italy.
Realization of parametric models of Vivaldi antennas in array configuration with CST Microwave 2012 and loading them on Antenna Magus library.

Supervisors Antonio Manna *ELT S.p.A.*

Sep. 2011 - Jan. 2012 **Stage**, *ELT Elettronica S.p.A.*, Electronic Warfare, Rome, Italy.
Design of a Dual Polarized Quadruple Ridged Horn over 6-18 GHz Band using CST Microwave 2011. Realization of a parametric model, simulation, results analysis and documentation.

Supervisors Fabrizio Trotta *ELT S.p.A.*

Internship

May 2016 - Sep. 2016 **Intern/Ph.D. Student,** *University of Houston*, Houston (TX), USA

Supervisors David R. Jackson *University of Houston*, Alessandro Galli *Sapienza - University of Rome*, and Mauro Ettorre *University of Rennes 1*

Description Analytical framework for evaluation of different figures of merit (beamwidth, directivity, etc...) of leaky-wave antennas.

Jan. 2015 - Jul. 2015 **Intern/Ph.D. Student,** *IETR UMR CNRS 6164*, Rennes, France

Supervisors Alessandro Galli *Sapienza - University of Rome*, and Mauro Ettorre *University of Rennes 1*

Description Development of a theoretical framework for the analysis of nondiffracting waves generated through Bessel-beam launchers at millimeter waves.

Description Electromagnetic modelling of multipath and backscattering phenomena for radar targets in maritime environment. Application of electromagnetic models, mainly based on geometrical optics, to detection and tracking algorithms for marine targets.

Jan. 2014 - Mar. 2014 **Intern/Ph.D. Student,** *IETR UMR CNRS 6164*, Rennes, France

Supervisors Alessandro Galli *Sapienza - University of Rome*, and Mauro Ettorre *University of Rennes 1*

Description Numerical study and full-wave optimization (Ansoft HFSS, COMSOL Multiphysics) of a Bessel beam launcher.

Jan. 2013 - Jul. 2013 **Intern/Thesis Student,** *IETR UMR CNRS 6164*, Rennes, France

Supervisors Alessandro Galli *Sapienza University of Rome*, and Ronan Sauleau *University of Rennes 1*

Description Analytical study and pre-design of a 40 GHz Bessel beam launcher for near-field applications.

Projects, Grants and Schools

Oct. 2017 – today **Leonardo S.p.A. and Sapienza University of Rome** "*Study of a Radiating System for Software-Defined Radar applications*", activity supervised by Prof. A. Galli.

Jun. 2017 – Aug. 2017 **Sapienza, University of Rome** Department of Information Engineering, and Telecommunications "*Development of THz radiating systems based on graphene*", activity supervised by Prof. A. Galli.

Mar. 2017 - May 2017 **Sapienza, University of Rome** "*Monitoring Committee of Faculty of Information Engineering, Informatics, and Statistics*", activity supervised by Prof. F. Nonino.

May. 2016 - Sep. 2016 **Matisse École Doctorale, Mobilité sortante de Rennes** "*Exact analytical formulas for the evaluation of the beamwidth of leaky-wave antennas* "

Mar. 2015 - Jun. 2015 **Newfocus Project,** "*Analytical study of focus wave modes through a Bessel beam launcher at millimeter waves*"

Jan. 2015 - Feb. 2014 **Matisse École Doctorale, Mobilité entrante à Rennes** "*Bessel beams and X-Wave modes at millimeter waves*"

Jan. 2014 - Mar. 2014 **Newfocus Project,** "*Near-field focusing at millimeter waves by means of high-order leaky-wave modes*"

Oct. 2015 **ESoA School,** European School of Antennas (ESoA), Zagreb, Croatia. "*Metasurfaces for Antennas*", held by Profs. Z. Šipuš and P. S. Kildal

Apr. 2014 **ESoA School,** European School of Antennas (ESoA), Rome, Italy. "*Leaky Waves and Periodic Structures for Antenna Applications*", held by Prof. F. Frezza

Educational Activities

Apr. 2017 **Lectures**

Description "*Electromagnetic Properties of Graphene; Graphene Leaky-Wave Antennas*", at the European School of Antennas (ESoA) "Leaky Waves and Periodic Structures for Antenna Applications" organized by Prof. F. Frezza at Sapienza University of Rome, 26-29 April, 2017.

Mar. 2017 **Workshops**

Description Invited speaker at the European Conference on Antennas and Propagation (EuCAP 2017) in Paris, France, 19-24 March, 2017. Workshop SWS03: *Nanotechnology Applications of Antennas and Wireless Sensing*.

Jun. 2014 - Today **Reviewer Activity**

Description I frequently serve as a Reviewer (see publons.com/a/1277806) for the following journals:

- *IEEE Transactions Antennas and Propagation*
- *IEEE Transactions on Nanotechnology*
- *IEEE Antennas and Wireless Propagation Letters*
- *IEEE Access*
- *Scientific Reports (Nature Publishing Group)*
- *Journal of the Optical Society of America A*
- *IOP Journal of Physics D: Applied Physics*
- *Nanoscale Research Letters*
- *AIP Physics of Plasmas*
- *AIP Advances*
- *IET Electronics Letters*
- *International Journal of Microwave and Wireless Technology*
- *International Journal of Antennas and Propagation*
- *Applied Computational Electromagnetics Society Journal*
- *International Journal of Electronics and Communications*

Apr. 2018 - Today **Chairman Activity**

Description I served as a Chairman of the session *Antennas for Future Applications* at the 12th European Conference on Antennas and Propagation (EuCAP18), London, UK, 9-13 April 2018.

Mar. 2014 - Today **Tutor Activity**

Description I support Prof. Alessandro Galli for the evaluation of the exams of the course "*Electromagnetic Fields*" (9 CFU) held for undergraduate students of Telecommunications and Electronic Engineering. More recently, I have served as a Tutor for both undergraduate and graduate students of Telecommunications and Electronic Engineering pursuing their Bachelor and Master thesis.

May. 2014 - Today **Seminar Activity**

Description I have given several talks about my research activities in different prestigious universities, such as University of Rome Sapienza, University of New Orleans, and University of Houston.

Awards

Apr. 2018 **Best Paper Award in Electromagnetics and Antenna Theory**

W. Fuscaldo, S. C. Pavone, D. Comite, G. Valerio, M. Albani, M. Ettorre, and A. Galli, "Efficient 2-D Leaky-Wave Antenna Configurations Based on Graphene Metasurfaces", *12th European Conference on Antennas and Propagation (EuCAP18)* London, UK, 9-13 April 2018.

Jan. 2018 **IEEE AP-S Student Award, Chapter Center-Southern Italy**

W. Fuscaldo, "Advanced Radiating Systems Based on Leaky Waves and Nondiffracting Waves ", *PhD Thesis*, 27 February 2017.

Oct. 2016 **Young Engineer Prize**

W. Fuscaldo, P. Burghignoli, P. Baccarelli, A. Galli, "Efficient 2-D Leaky-Wave Antenna Configurations Based on Graphene Metasurfaces", *46th European Microwave Conference (EuMC16)* London, UK, 3-7 October 2016.

Dec. 2015 **Yarman-Carlin Student Award (2nd prize)**

W. Fuscaldo, P. Burghignoli, P. Baccarelli, A. Galli, "Graphene-based Reconfigurable Leaky-Wave Antennas for THz Applications", *2015 IEEE 15th Mediterranean Microwave Symposium (MMS15)*, pp.282-285, Lecce, Italy, 2015.

PhD thesis

Nov. 2013 - Feb. 2017 *Advanced Radiating Systems Based on Leaky Waves and Nondiffracting Waves*

Supervisors Prof. Alessandro Galli *Sapienza - University of Rome*, and Dr. Mauro Ettorre *University of Rennes 1*

Examination Committee *Prof. Giuseppe Schettini* (Roma 3 University), Prof. Alessandro Toscano (Roma 3 University), Prof. Francisco Medina-Mena (University of Seville), Prof. Alessandro Galli (Sapienza - University of Rome), and Dr. Mauro Ettorre (University of Rennes 1)

Description Analysis, design, prototyping and measurements of near-field focusing systems generating Bessel beams through the excitation of leaky-wave modes in the millimeter-wave range. Theoretical analysis and design of near-field focusing systems generating limited-dispersive, limited-diffractive X-waves. Analysis, modeling, and design of reconfigurable THz leaky-wave antennas based on graphene and nematic liquid crystals whose main beam can electronically be steered at fixed frequency. Rigorous evaluation of their performance in terms of directivity, efficiency and reconfigurability.

Master thesis

Jan. 2013 - Jul. 2013 *Design of Bessel Beam Launcher Using Leaky Wave Modes in Multimode Propagation*

Supervisors Prof. Alessandro Galli *Sapienza - University of Rome*, and Prof. Ronan Sauleau *University of Rennes 1*

Advisorw Dr. Guido Valerio *Sapienza - University of Rome* and Dr. Mauro Ettorre *University of Rennes 1*

Description Pre-design of Bessel beam launcher using higher-order leaky-wave modes in multimode propagation using analytical models.

Bachelor thesis

Oct. 2010 - Dec. 2010 *Analytical Methods for Electromagnetic Radiation Problems*

Supervisor Prof. Alessandro Galli *Sapienza - University of Rome*

Advisor Dr. Guido Valerio *Sapienza - University of Rome*

Description Multipole Expansion and Spherical Harmonics Expansion in electromagnetic problems

Education

Nov. 2013 - Feb. 2017 **Ph.D. in Information and Communication Technology**, *Sapienza - University of Rome (Italy) and University of Rennes 1 (France)*.

Topic *Advanced Radiating Systems Based on Leaky Waves and Nondiffracting Waves*

Supervisors Alessandro Galli *Sapienza - University of Rome* and Mauro Ettorre *University of Rennes 1*

Description Ph.D. degree (*cum laude* and with the *Doctor Europaeus label*) in international cotutelle agreement between the two organizations of Sapienza - University of Rome and University of Rennes 1.

Jan. 2011 - Jul. 2013 **M.Sc. in Communications Engineering**, *Sapienza - University of Rome*, Rome, Italy.
Grade: 110/110 cum laude

Dec. 2010 - Sep. 2007 **B.Sc. in Communications Engineering**, *Sapienza - University of Rome*, Rome, Italy.
Grade: 110/110

Sep. 2007 - Sep. 2006 **B.Sc. in Mathematics**, *Sapienza - University of Rome*, Rome, *Grade: None*.

Academic Courses

Sep. 2015 - Dec. 2015 *Quantum Mechanics with Fundamentals of Solid State Physics* held by Prof. P. Postorino, Dept. of Physics, Sapienza - University of Rome. *Certificate of Attendance*

Mar. 2014 - Jun. 2014 *Complex Variable* held by Prof. D. Fiorenza, Dept. of Mathematics, Sapienza - University of Rome *Certificate of Attendance*

Mar. 2014 - Jun. 2014 *Numerical Methods for Partial Differential Equations (PDEs)* held by Prof. E. Carlini, Dept. of Mathematics, Sapienza - University of Rome *Certificate of Attendance*

Mar. 2014 - Jun. 2014 *Optics* held by Prof. E. Fazio, Dept. of Basic and Applied Sciences for Engineering, Sapienza - University of Rome *Certificate of Attendance*

Mar. 2014 - Jun. 2014 *Numerical Methods for Electromagnetics* held by Prof. P. Burghignoli and Prof. P. Baccarelli, Dept. of Information Engineering, Electronics and Telecommunications, Sapienza - University of Rome *Certificate of Attendance*

Academic Online Courses (provided by Coursera)

Feb. 2016 - Mar. 2016	*Graphene and Two-Dimensional Materials* held by Dr. Aravind Vijayaraghavan, Lecturer in Nanomaterials, School of Materials and National Graphene Institute, University of Manchester *Statement of Accomplishment*
Apr. 2015 - Jul. 2015	*Introduction to Mathematical Philosophy* held by Prof. H. Leitgeb and Prof. S. Hartmann, Munich Center for Mathematical Philosophy, Ludwig-Maximilians-Universität München *Statement of Accomplishment*
Sep. 2014 - Nov. 2014	*Introduction to Interactive Programming in Python* held by Profs. J. Warren, S. Richner, J. Greigner and S. Wong, Dept. of Computer Science, University of Rice *Statement of Accomplishment*
Jun. 2014 - Aug. 2014	*Preparation for General Chemistry* held by Prof. D. M. York, Dept. of Chemistry and General Biology, Rutgers - The State University of New Jersey *Statement of Accomplishment (with distinction)*
Oct. 2013 - Jan. 2014	*Analysis of a Complex Kind* held by Prof. P. Bonfert-Taylor, Dept. of Mathematics and Computer Science, Wesleyan University *Statement of Accomplishment*
Sep. 2013 - Dec. 2013	*Calculus II: Sequences and Series* held by Dr. J. Fowler, Dept. of Mathematics, The Ohio State University *Statement of Accomplishment*
Aug. 2013 - Dec. 2013	*Calculus I* held by Dr. B. Snapp and Dr. J. Fowler, Dept. of Mathematics, The Ohio State University *Statement of Accomplishment (with distinction)*
Jul. 2013 - Aug. 2013	*Case-based Introduction to Biostatistics* held by Prof. S. Zeger, Bloomberg School of Public Health, Johns Hopkins University *Statement of Accomplishment (with distinction)*
Dec. 2012 - Feb. 2013	*Introduction to Astronomy* held by Prof. M. R. Plesser, Dept. of Physics, Duke University *Statement of Accomplishment (with distinction)*

Languages

Italian	Mother tongue
English	Fluent
French	Good

Computer skills

Operating Systems	Windows, Linux (basic)
Programming Languages	C, Java, Python, FORTRAN (basic)
EM CAD Tools	Ansoft HFSS, CST Microwave, FEKO, COMSOL Multiphysics
Circuit CAD Tools	PSPICE/OrCAD
Computational softwares	MATLAB, Mathematica
Markup Languages	LaTeX, HTML

Web development and database	PHP, MySQL

Driving Licenses

Italian Driving License - Category B Vehicle

Interests

Science	Mathematics, Physics and Biology
Arts	Literature, Cinema and Music
Sport	Football, Running and Chess

References

Prof. Alessandro Galli (University of Rome "Sapienza ", Department of Information Engineering, Electronics and Telecommunications)

Prof. David R. Jackson (University of Houston, Department of Electrical and Computer Engineering)

Prof. Ronan Sauleau (Université de Rennes 1, Insitut d'Électronique et de Télécommunications de Rennes)

Dr. Mauro Ettorre (Université de Rennes 1, Insitut d'Électronique et de Télécommunications de Rennes)

Prof. Guido Valerio (Sorbonne Universités, Université Pierre et Marie Curie, Laboratoire d'Électronique et d'Electromagnétisme)

Dr. Paolo Braca (NATO-STO - Centre for Maritime Research and Experimentation, La Spezia, Italy)