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Assistant Professor
Università di Udine
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Personal data

Place of birth Cividale del Friuli (UD), Italy
Date of birth March 23rd, 1977
Marital status Married with Giulia Ferrario
Childrens Sara (2010), Fabio (2013)

Education

- **Università di Udine** Udine, Italy
Ph.D. in Industrial and Information Engineering 2007
– Advisor: Prof. Francesco Trevisan
- **Università di Udine** Udine, Italy
M.Sc. in Electronic Engineering 2002
– Advisors: Prof. Paolo Bettini, Prof. Francesco Trevisan

Research positions

- **Università di Udine** Udine, Italy
Tenure as Assistant Professor 2009 – present
– Courses taught:
 - * Electrical Science (\approx 200 students)
 - * Electromagnetic Compatibility (\approx 15 students)
- **Université de Liège** Liège, Belgium
Postdoc 2008
– Advisors: prof. Patrick Dular and prof. Christophe Geuzaine, Applied and Computational Electromagnetics (ACE), Department of Electrical Engineering and Computer Science

Research activity

His main research interests have been focused on the theoretical aspects of numerical methods for the computation of electric and magnetic fields, with applications to non-destructive testing and to biomedical engineering. Presently he is collaborating with national and international research groups, working on applied and computational electromagnetism, coupled problems (MEMS, nanoelectronics and fuel cells modeling), computational topology and computer aided design (CAD), nuclear fusion reactors engineering and design, and lab-on-a-chip biosensors. He is author or co-author of over 70 scientific papers published in international journals with ISI Impact factor and two patents.

Awards & Grants

- Agence national de la recherche (ANR) grant for two months Visiting Professor position at the Institut Montpellierain Alexander Grothendieck of the Université de Montpellier, Montpellier, France.
March–May 2016
- Centre national de la recherche scientifique (CNRS) competitive grant for a three months Visiting Professor position at the Institut Montpellierain Alexander Grothendieck of the Université de Montpellier, Montpellier, France.
March–June 2015
- Principal investigator of the research project “Lab-on-a-chip device for point-of-care diagnostics of the thrombotic risk profile,” which has been funded with 30,000 € as a *Proof of Concept Network* (PoCN) by the Area Science Park of Trieste with the advocacy of the Italian Ministry of University and Research (MIUR).
February 2015
- Competitive grant for a one month Visiting Professor position at the Centro Internazionale per la Ricerca Matematica (CIRM) of the Fondazione Bruno Kessler (FBK)–Università di Trento, Trento, Italy (see also <https://cirm.fbk.eu/list-visiting-professors-cirm-2008-2014>).
March 2013
- Principal investigator of the research project “A novel system based on Electric Impedance Tomography (EIT) for *in vitro* imaging of haemostasis,” which has been funded with 139,570 € as a *Research Project of National Interest* (PRIN) by the Italian Ministry of University and Research (MIUR). It has also been cofunded with 15,000 € by University of Udine.
17 October 2011 – 17 October 2013
- Founder of the IRONSCAN team which was selected as a winner at the business plan competition StartCup FVG, presenting a project about the three-dimensional imaging of rebars in concrete. The project won also the special price dedicated to prevention of damages due to heartquakes. The price consisted in 4,500 €.
2009
- Postdoc Scholarship at Université de Liège, Liège, Belgium.
2008
- Italian Ministry of University and Research (MIUR) Research Scholarship.
2007 and 2003
- Best Poster prize at the Italian Meeting of Researchers in Electrical Engineering ET2006, Turin, Italy.
2006
- Italian Ministry of University and Research (MIUR) three years Ph.D. Scholarship.
2004 – 2006

Editorships & Reviewer

- Editor of the ISI international journal *Mathematical Problems in Engineering*, whose impact factor is 1.082 according to 2013 Journal Citation Reports released by Thomson Reuters in 2014.
2014 – present
- Was part of the Editorial Board of the 8th Workshop on Advanced Computational Electromagnetics (ACE'13), held at the Centro Internazionale per la Ricerca Matematica (CIRM), Fondazione Bruno Kessler (FBK), Trento, Italy (see <http://www.science.unitn.it/ACE2013/>)
2013
- Is part of the Editorial Board of the Conference on the Computation of Electromagnetic Fields (COMPUMAG) and IEEE Conference on Electromagnetic Field Computation (CEFC), the two biggest conferences about computational electromagnetics.
2008 – present
- Reviewer for 12 journals: IEEE Transactions on Magnetics, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Microwave Theory and Techniques, IEEE Transactions on Pattern Analysis and Machine Intelligence, COMPEL: The International Journal for Computation and Mathematics in Electrical and Electronic Engineering, the European Physical Journal-Applied Physics (EPJ-AP), Journal of Theoretical and Applied Physics, Mathematical Problems in Engineering, Journal of Discrete Mathematics, Journal of Computational Methods in Sciences and Engineering, Annals of Mathematics and Artificial Intelligence and Journal of Computational Physics.

Academic Visits

- **Tampere University of Technology** Tampere, Finland
Department of Electrical Engineering, prof. Lauri Kettunen Mar–Jul, 2005
- **Université de Liège** Liège, Belgium
Department of Electrical Engineering and Computer Science, prof. Patrick Dular Nov, 2005
- **Boston University** Boston, MA, USA
Department of Electrical & Computer Engineering, prof. Robert P. Kotiuga May–Jul, 2006
- **Jagiellonian University** Krakow, Poland
Department of Mathematics and Computer Science, prof. Marian Mrozek Mar, 2009
- **Trento University** Trento, Italy
Department of Mathematics, prof. Alberto Valli Jun, 2012
- **Fondazione Bruno Kessler (FBK) - CIRM Visiting Professor** Trento, Italy
Centro Internazionale per la Ricerca Matematica (CIRM), prof. Alberto Valli Mar, 2013
- **Trento University** Trento, Italy
Department of Mathematics, prof. Alberto Valli July, 2014
- **Montpellier University - CNRS Visiting Professor** Montpellier, France
Institut Montpellierain Alexander Grothendieck, prof. Daniele A. Di Pietro Mar–June, 2015
- **Trento University** Trento, Italy
Department of Mathematics, prof. Ana Alonso July, 2015
- **Trento University** Trento, Italy
Department of Mathematics, prof. Enrico Bertolazzi September, 2015
- **Montpellier University - ANR Visiting Professor** Montpellier, France
Institut Montpellierain Alexander Grothendieck, prof. Daniele A. Di Pietro Mar–May, 2016

- [J1] L. Codecasa, R. Specogna, F. Trevisan, *Geometrically defined basis functions for polyhedral elements with applications to computational electromagnetics*, ESAIM: Mathematical Modelling and Numerical Analysis (M2AN), in press, 2015.
- [J2] P. Bettini, P. Dłotko, R. Specogna, *A boundary integral method for computing eddy currents in non-manifold thin conductors*, IEEE Transactions on Magnetism, in press, 2016.
- [J3] R. Specogna, *Lean complementarity for Poisson problems*, IEEE Transactions on Magnetism, in press, 2016.
- [J4] R. Specogna, *Fast frequency and material properties sweeps for quasi-static problems*, IEEE Transactions on Magnetism, in press, 2016.
- [J5] M. Cicuttin, L. Codecasa, R. Specogna, F. Trevisan, *Excitation by scattering/total field decomposition and uniaxial PML in the geometric formulation*, IEEE Transactions on Magnetism, in press, 2016.
- [J6] P. Alotto, P. Bettini, R. Specogna, *Sparsification of BEM matrices for large-scale eddy current problems*, IEEE Transactions on Magnetism, in press, 2016.
- [J7] M. Cicuttin, L. Codecasa, R. Specogna, F. Trevisan, *Complementary discrete geometric h-field formulation for wave propagation problems*, IEEE Transactions on Magnetism, in press, 2016.
- [J8] A. Affanni, G. Chiorboli, R. Specogna, F. Trevisan, *Uncertainty model of electro-optical thrombus growth estimation for early risk detection*, Measurement, in press, 2015.
- [J9] P. Bettini, M. Furno Palumbo, R. Specogna, *A boundary element method for eddy-current problems in fusion devices*, Fusion Engineering and Design, in press, 2015.
- [J10] S. Mastrostefano, P. Bettini, T. Bolzonella, M. Furno Palumbo, Y.Q. Liu, G. Matsunaga, R. Specogna, M. Takechi, F. Villone, *Three-dimensional analysis of JT-60SA conducting structures in view of RWM control*, Fusion Engineering and Design, in press, 2015.
- [J11] P. Bettini, R. Specogna, *A novel approach for solving three dimensional eddy current problems in fusion devices*, Fusion Engineering and Design, DOI: 10.1016/j.fusengdes.2014.12.002, in press, 2015.
- [J12] R. Specogna, *One stroke complementarity for Poisson-like problems*, IEEE Transactions on Magnetism, Vol. 51, No. 3, 7401404, 2015.
- [J13] R. Specogna, *Diagonal discrete Hodge operators for simplicial meshes using the signed dual complex*, IEEE Transactions on Magnetism, Vol. 51, No. 3, 7400904, 2015.
- [J14] P. Dłotko, B. Kapidani, R. Specogna, *Fast computation of cuts with reduced support by solving maximum circulation problems*, IEEE Transactions on Magnetism, Vol. 51, No. 3, 7202004, 2015.
- [J15] S. Chialina, M. Cicuttin, L. Codecasa, R. Specogna, F. Trevisan, *Port boundary conditions for discrete electromagnetic problems in the frequency domain*, IEEE Transactions on Magnetism, Vol. 51, No. 3, 7203504, 2015.
- [J16] P. Bettini, T. Bolzonella, A. Ferro, M. Furno Palumbo, S. Mastrostefano, G. Matsunaga, R. Specogna, M. Takechi, F. Villone, *Advanced computational tools for the characterization of the dynamic response of MHD control systems in large fusion devices*, IEEE Transactions on Magnetism, Vol. 51, No. 3, 7204105, 2015.

- [J17] P. Bettini, R. Specogna, *A boundary integral method for computing eddy currents in thin conductors of arbitrary topology*, IEEE Transactions on Magnetics, Vol. 51, No. 3, 7203904, 2015.
- [J18] P. Dłotko, R. Specogna, *Topology preserving thinning for cell complexes*, IEEE Transactions on Image Processing, Vol. 23, No. 10, pp. 4486-4495, 2014, regular paper.
- [J19] P. Bettini, R. Specogna, *Computation of stationary 3D halo currents in fusion devices with accuracy control*, Journal of Computational Physics, Vol. 273, pp. 100117, 2014, regular paper.
- [J20] A. Paussa, R. Specogna, D. Esseni, F. Trevisan, *Discrete Geometric Approach for Modelling Quantization Effects in Nanoscale Electron Devices*, Journal of Computational Electronics, Vol. 13, No. 1, pp. 287-299, 2014, regular paper.
- [J21] P. Dłotko, R. Specogna, *Lazy cohomology generators: a breakthrough in (co)homology computations for CEM*, IEEE Transactions on Magnetics, Vol. 50, No. 2, 7014204, 2014.
- [J22] A. Affanni, G. Chiorboli, L. Codecasa, M.R. Cozzi, L. De Marco, M. Mazzucato, C. Morandi, R. Specogna, M. Tartagni, F. Trevisan, *A novel inversion technique for imaging thrombus volume in microchannels fusing optical and impedance data*, IEEE Transactions on Magnetics, Vol. 50, No. 2, 7025304, 2014.
- [J23] P. Bettini, N. Pilan, R. Specogna, *A novel tool for breakdown probability predictions on multi-electrode multi-voltage systems*, IEEE Transactions on Magnetics, Vol. 50, No. 2, 7002104, 2014.
- [J24] P. Bettini, R. Specogna, *Lazy cohomology generators enable the use of complementarity for computing halo current resistive distribution in fusion reactors*, IEEE Transactions on Magnetics, Vol. 50, No. 2, 7012004, 2014.
- [J25] R. Specogna, F. Trevisan, *Geometry of the 3D Schroedinger problem and comparison with Finite Elements discretization*, IEEE Transactions on Magnetics, Vol. 50, No. 2, 7004504, 2014.
- [J26] P. Bettini, L. Marrelli, R. Specogna, *Calculation of 3D magnetic fields produced by MHD active control systems in fusion devices*, IEEE Transactions on Magnetics, Vol. 50, No. 2, 7000904, 2014.
- [J27] R. Specogna, *Extraction of VLSI multiconductor transmission line parameters by complementarity*, IEEE Transactions on Computer Aided Design of Integrated Circuits and Systems, Vol. 22, No. 1, pp. 146-154, 2014, regular paper.
- [J28] A. Affanni, R. Specogna, F. Trevisan, *Combined electro-optical imaging for the time evolution of white thrombus growth in artificial capillaries*, IEEE Transactions on Instrumentation and Measurement, Vol. 62, No. 11, pp. 2954-2959, 2013, regular paper.
- [J29] P. Bettini, A. De Lorenzi, N. Pilan, R. Specogna, *Voltage holding optimization of the MITICA electrostatic accelerator*, Fusion Engineering and Design, Vol. 88, No. 6-8, 2013, pp. 1038-1041.
- [J30] R. Albanese, P. Bettini, N. Marconato, M. Furno Palumbo, S. Peruzzo, G. Rubinacci, R. Specogna, S. Ventre, F. Villone, *Numerical modeling of 3D halo current path in ITER structures*, Fusion Engineering and Design, Vol. 88, No. 68, 2013, pp. 529-532.
- [J31] P. Dłotko, R. Specogna, *Physics inspired algorithms for (co)homology computations of three-dimensional combinatorial manifolds with boundary*, Computer Physics Communications (CPC), Vol. 184, No. 10, 2013, pp. 2257-2266, regular paper.
- [J32] R. Specogna, *Optimal cohomology generators for 2d eddy-current problems in linear time*, IEEE Transactions on Magnetics, Vol. 49, No. 4, 2013, pp. 1299-1304, regular paper.

- [J33] P. Dłotko, R. Specogna, *A novel technique for cohomology computations in engineering practice*, Computer Methods in Applied Mechanics and Engineering (CMAME), Vol. 253, 2013, pp. 530-542, regular paper.
- [J34] P. Dłotko, R. Specogna, *Cohomology in 3d magneto-quasistatic modeling*, Communications in Computational Physics, Vol. 14, No. 1, 2013, pp. 48-76, regular paper.
- [J35] A. Affanni, R. Specogna, F. Trevisan, *A geometric approach to cell membrane and contact impedance modeling*, IEEE Transactions on Biomedical Engineering, Vol. 59, No. 9, 2012, pp. 2619-2627, regular paper.
- [J36] L. Codecasa, R. Specogna, F. Trevisan, *Discrete geometric formulation of admittance boundary conditions for frequency domain problems*, IEEE Transactions on Antennas and Propagation, Vol. 60, No. 8, 2012, pp. 3998-4002, regular paper.
- [J37] D. Breda, D. Esseni, A. Paussa, R. Specogna, F. Trevisan, R. Vermiglio, *Comparison between Pseudospectral and Discrete Geometric Methods for Modelling Quantization Effects in Nanoscale Electron Devices*, IEEE Transactions on Magnetics, Vol. 48, 2012, pp. 203-206.
- [J38] F. Moro, R. Specogna, A. Stella, F. Trevisan, *Cathodic Current Density Distribution Modeling in Proton Exchange Membrane Fuel Cells*, IEEE Transactions on Magnetics, Vol. 48, 2012, pp. 699-702.
- [J39] R. Specogna, *Complementary geometric formulations for electrostatics*, International Journal for Numerical Methods in Engineering (IJNME), Vol. 86, 2011, pp. 1041-1068, regular paper.
- [J40] P. Dłotko, R. Specogna, *Efficient generalized source field computation for h-oriented magnetostatic formulations*, Eur. Phys. J.-Appl. Phys. (EPJ-AP), Vol. 53, 2011, 20801, regular paper.
- [J41] R. Specogna, F. Trevisan *A discrete geometric approach to solving time independent Schrödinger equation*, Journal of Computational Physics, Vol. 230, 2011, pp. 1370-1381, regular paper.
- [J42] P. Bettini, M. Midrio, R. Specogna, *Geometric formulation of Maxwell's equations in the frequency domain for 3D wave propagation problems in unbounded regions*, CMES: Computer Modeling in Engineering & Sciences, Vol. 66, No. 2, 2010, pp. 117-134, regular paper.
- [J43] L. Codecasa, P. Dular, R. Specogna, F. Trevisan, *A non-destructive testing application solved with $A - \chi$ geometric eddy-current formulation*, International Journal for Computation and Mathematics in Electrical Engineering (COMPEL), Vol. 29, No. 6, 2010, pp. 1606-1615.
- [J44] R. Specogna, P. Dular, F. Trevisan, *A perturbation method for the $A - \chi$ geometric eddy-current formulation*, Eur. Phys. J.-Appl. Phys. (EPJ-AP), Vol. 52, 2010, 23309.
- [J45] P. Dłotko, R. Specogna, *Critical analysis of the spanning tree techniques*, SIAM Journal of Numerical Analysis (SINUM), Vol. 48, No. 4, 2010, pp. 1601-1624, regular paper.
- [J46] P. Dłotko, R. Specogna, *Efficient cohomology computation for electromagnetic modeling*, CMES: Computer Modeling in Engineering & Sciences, Vol. 60, No. 3, 2010, pp. 247-278, regular paper.
- [J47] L. Codecasa, R. Specogna, F. Trevisan, *A New Set of Basis Functions for the Discrete Geometric Approach*, Journal of Computational Physics, Vol. 229, 2010, pp. 74017410, regular paper.
- [J48] L. Codecasa, P. Dular, R. Specogna, F. Trevisan, *Time-domain geometric eddy-current A formulation for hexahedral grids*, IEEE Transactions on Magnetics, Vol. 46, No. 8, August 2010, pp. 3301-3304.

- [J49] P. Bettini, R. Specogna, F. Trevisan, *A Discrete Geometric Approach to solving 2D non-linear magnetostatic problems*, IEEE Transactions on Magnetics, Vol. 46, No. 8, August 2010, pp. 3049-3052.
- [J50] L. Codecasa, P. Dular, R. Specogna, F. Trevisan, *A perturbation method for the $T - \Omega$ eddy-current formulation*, IEEE Transactions on Magnetics, Vol. 46, No. 8, August 2010, pp. 3045-3048.
- [J51] P. Dłotko, R. Specogna, F. Trevisan, *Voltage and current sources for massive conductors suitable with the $A - \chi$ Geometric Formulation*, IEEE Transactions on Magnetics, Vol. 46, No. 8, August 2010, pp. 3069-3072.
- [J52] L. Codecasa, R. Specogna, F. Trevisan, *Constitutive Relations for Discrete Geometric Approach over Hexahedral Grids*, IEEE Transactions on Magnetics, Vol. 46, No. 8, August 2010, pp. 3077-3080.
- [J53] L. Codecasa, R. Specogna, F. Trevisan, *A geometric integral formulation for eddy-currents*, International Journal for Numerical Methods in Engineering (IJNME), Vol. 82, No. 13, 2010, pp. 1720-1736, regular paper.
- [J54] P. Dłotko, R. Specogna, F. Trevisan, *Automatic generation of cuts on large-sized meshes for $T - \Omega$ geometric eddy-current formulation*, Computer Methods in Applied Mechanics and Engineering (CMAME), Vol. 198, 2009, pp. 3765-3781, regular paper.
- [J55] L. Codecasa, R. Specogna, F. Trevisan, *Subgridding to Solving Magnetostatics within Discrete Geometric Approach*, IEEE Transactions on Magnetics, Vol. 45, Iss. 3, 2009, pp. 1024-1027.
- [J56] P. Bettini, R. Specogna, F. Trevisan, *Electroquasistatic analysis of the Gas Insulated Line for the ITER Neutral Beam Injector*, IEEE Transactions on Magnetics, Vol. 45, Iss. 3, 2009, pp. 996-999.
- [J57] P. Bettini, S. Boscolo, M. Midrio, R. Specogna, *Design optimization of waveguide bends in photonic crystals*, IEEE Transactions on Magnetics, Vol. 45, Iss. 3, 2009, pp. 1630-1633.
- [J58] A. De Lorenzi, L. Grando, A. Pesce, P. Bettini, R. Specogna, *Modeling of epoxy resin spacers for the 1 MV dc gas insulated line of ITER neutral beam injector system*, IEEE Transactions on Dielectrics and Electrical Insulation, Vol.16, No.1, 2009, pp. 77-87, regular paper.
- [J59] L. Codecasa, R. Specogna, F. Trevisan, *Base functions and discrete constitutive relations for staggered polyhedral grids*, Computer Methods in Applied Mechanics and Engineering (CMAME), Vol. 198, Iss. 9-12, 2009, pp. 1117-1123, regular paper.
- [J60] R. Specogna, F. Trevisan, *Advanced Geometric Formulations for the Design of a Long Defects Detection System*, Nondestructive Testing and Evaluation, Vol. 24, Issue 1, 2009, pp. 192-207, invited paper.
- [J61] P. Bettini, E. Brusa, M. Munteanu, R. Specogna and F. Trevisan, *Innovative numerical methods for nonlinear MEMS: the Non-Incremental FEM vs. the Discrete Geometric Approach*, CMES: Computer Modeling in Engineering & Sciences, Vol.33, No.3, 2008, pp. 215-242, regular paper.
- [J62] L. Codecasa, R. Specogna, F. Trevisan, *Discrete constitutive equations over hexahedral grids for eddy-current problems*, CMES: Computer Modeling in Engineering & Sciences, Vol.31, No.3, 2008, pp. 129-144, regular paper.
- [J63] E. Cardelli, A. Faba, A. Formisano, R. Martone, F. C. Morabito, M. Papais, A. Pirani, M. Ricci, R. Specogna, A. Tamburrino, F. Trevisan, M. Versaci and S. Ventre, *The AMDE project: 3D volumetric anomalies reconstruction by eddy current testing*, International Journal of Applied Electromagnetics and Mechanics (IJAEM), Vol. 28, N. 1-2, 2008, pp. 321-327.

- [J64] P. Bettini, E. Brusa, M. Munteanu, R. Specogna, F. Trevisan, *Static behaviour prediction of microelectrostatic actuators by discrete geometric approaches*, IEEE Transaction on Magnetics, Vol. 44, Iss. 6, June 2008, pp. 1606-1609.
- [J65] R. Specogna, F. Trevisan, *Eddy-currents computation with $T - \Omega$ discrete geometric formulation for a NDE problem*, IEEE Transaction on Magnetics, Vol. 44, Iss. 6, June 2008, pp. 698-701.
- [J66] P. Dular, R. Specogna, F. Trevisan, *Constitutive matrices using hexahedra in a discrete approach for eddy currents*, IEEE Transaction on Magnetics, Vol. 44, Iss. 6, June 2008, pp. 694-697.
- [J67] F. Henrotte, R. Specogna, F. Trevisan, *Reinterpretation of the Nodal Force Method within discrete geometric approaches*, IEEE Transaction on Magnetics, Vol. 44, Iss. 6, June 2008, pp. 690-693.
- [J68] A. Pirani, M. Ricci, R. Specogna, A. Tamburrino, F. Trevisan, *Multi-frequency identification of defects in conducting media*, Inverse Problems 24, 035011, 2008, regular paper.
- [J69] R. Specogna, S. Suuriniemi and F. Trevisan, *Geometric $T - \Omega$ approach to solve eddy-currents coupled to electric circuits*, International Journal for Numerical Methods in Engineering, Vol. 74, Iss. 1, Pages 101-115, 2 April 2008, regular paper.
- [J70] A. De Lorenzi, L. Grando, R. Gobbo, G. Pesavento, P. Bettini, R. Specogna and F. Trevisan, *The insulation structure of the 1 MV transmission line for the ITER neutral beam injector*, Fusion Engineering and Design, Volume 82, Issues 5-14, October 2007, pp. 836-844.
- [J71] E. Cardelli, A. Faba, R. Specogna, F. Trevisan, *Image Reconstruction of Defects in Metallic Plates Using a Multi-Frequency Detector System and a Discrete Geometric Approach*, IEEE Transaction on Magnetics, Volume 43, Issue 4, April 2007, pp. 1857- 1860.
- [J72] L. Codecasa, R. Specogna, F. Trevisan, *Symmetric positive-definite constitutive matrices for discrete eddy-current problems*, IEEE Transaction on Magnetics, Volume 43, Issue 2, Part 1, Feb. 2007, pp. 510-515, regular paper.
- [J73] P. Dular, R. Specogna, F. Trevisan *Coupling between circuits and $A - \chi$ discrete geometric formulation*, IEEE Transaction on Magnetics, Volume 42, Issue 4, April 2006, pp. 1043-1046.
- [J74] P. Bettini, S. Boscolo, R. Specogna, F. Trevisan, *A geometric approach for wave propagation in 2-D photonic crystals in the frequency domain*, IEEE Transaction on Magnetics, Volume 42, Issue 4, April 2006, pp. 827-830.
- [J75] P. Alotto, R. Specogna, F. Trevisan, *A θ -method for eddy currents in time domain with a discrete geometric approach*, IEEE Transaction on Magnetics, Volume 42, Issue 4, April 2006, pp. 779-782.
- [J76] R. Specogna, F. Trevisan, *Voltage sources with $A - \chi$ discrete Geometric Approach to eddy-currents*, Eur. Phys. J.-Appl. Phys. (EPJ-AP), Vol. 33, 2006, pp. 97-101, regular paper.
- [J77] E. Cardelli, A. Faba, R. Specogna, A. Tamburrino, F. Trevisan, S. Ventre, *Analysis Methodologies and Experimental Benchmarks for ECT*, IEEE Transaction on Magnetics, Volume 41, Issue 5, May 2005, pp. 1380-1383.
- [J78] R. Specogna, F. Trevisan, *Discrete constitutive equations in $A - \chi$ geometric eddy-currents formulation*, IEEE Transaction on Magnetics, Volume 41, Issue 4, April 2005, pp. 1259-1263, regular paper.

- [JS1] S. Chialina, M. Cicuttin, L. Codecasa, G. Solari, R. Specogna, F. Trevisan, *Modeling of anechoic chambers with equivalent materials and equivalent sources*, IEEE Transactions on Electromagnetic Compatibility, 2015, regular paper.
- [JS2] A. Alonso Rodriguez, E. Bertolazzi, R. Ghiloni, R. Specogna, *Efficient construction of homological Seifert surfaces*, submitted to SIAM Journal on Numerical Analysis - preprint available on arXiv.
- [JS3] D.A. Di Pietro, R. Specogna, *Residual-based a posteriori error estimates for the Mixed High-Order method*, submitted to Journal of Computational Physics.

Patents

- [PT1] A. Affanni, M. Cozzi, L. De Marco, M. Mazzucato, R. Specogna, F. Trevisan, *Metodo per l'analisi del processo di formazione di aggregati in un fluido biologico e relativa apparecchiatura di analisi - Method for the analysis of the formation process of aggregates in a biological fluid and related point-of-care device*, Italian Patent UD2012A000079 extended with PCT WO2013164676.
- [PT2] A. Affanni, M. Battiston, L. De Marco, M. Mazzucato, R. Specogna, F. Trevisan, *Apparecchiatura per l'analisi del processo di formazione di aggregati in un fluido biologico e relativo metodo di analisi - Device for the analysis of the aggregation process in a biological fluid and relative analysis method*, Italian Patent UD2013A000047.

Book chapters published in international books

- [B1] M. Buonsanti, P. Bettini, A. Calcagno, E. Cardelli, M. Cioffi, E. Coccorese, P. di Barba, A. Faba, F. Ferraioli, L. Ferrigno, A. Formisano, M. Laracca, R. Martone, F.C. Morabito, M. Morozof, G. Rubinacci, A. Savini, R. Specogna, A. Stella, A. Tamburrino, F. Trevisan, S. Ventre, M. Versaci, F. Villone, *Solution of direct and inverse problems in NDE: the MADEND Project*, in E'NDE, Electromagnetic Non-destructive Evaluation (IX), N. Bowler and Udpa (Eds.), IOS Press, 2005, ISBN: 1-58603-522-3.
- [B2] R. Specogna, F. Trevisan, *Progress Report in Discrete Electromagnetism*, Advanced Computational Electromagnetism Seminar 2005 (ACE05), L. Kettunen (Ed.), Tampere, Finland, ISBN 952-15-1482-5.
- [B3] M. Papais, R. Specogna, F. Trevisan, E. Cardelli, A. Faba, A. Tamburrino, S. Ventre, R. Martone, A. Formisano, F. C. Morabito, M. Versaci, *Design of a system for the long defects detection with advanced methods for eddy-currents analysis*, in E'NDE, Electromagnetic Non-destructive Evaluation (XI), A. Tamburrino, Y. Melikhov (Eds.), IOS Press, 2008, pp. 195-202, ISBN: 978-1-58603- 896-0.
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