Ruth Vazquez Sabariego

List of Publications by Year
in descending order

110 papers	820 citations	567281 15 h-index	677142 22 g-index
110 all docs	110 docs citations	110 times ranked	550 citing authors

#	Article	IF	Citations
1	A nonlinear time-domain homogenization technique for laminated iron cores in three-dimensional finite-element models. IEEE Transactions on Magnetics, 2006, 42, 763-766.	2.1	77
2	Time-Domain Homogenization of Windings in 3-D Finite Element Models. IEEE Transactions on Magnetics, 2008, 44, 1302-1305.	2.1	34
3	Time-Domain Homogenization of Windings in 2-D Finite Element Models. IEEE Transactions on Magnetics, 2007, 43, 1297-1300.	2.1	33
4	Homogenization of Form-Wound Windings in Frequency and Time Domain Finite-Element Modeling of Electrical Machines. IEEE Transactions on Magnetics, 2010, 46, 2852-2855.	2.1	28
5	A Perturbation Method for Computing Field Distortions Due to Conductive Regions With ${mmb h}$-Conform Magnetodynamic Finite Element Formulations. IEEE Transactions on Magnetics, 2007, 43, 1293-1296.	2.1	26
6	Perturbation Finite Element Method for Magnetic Model Refinement of Air Gaps and Leakage Fluxes. IEEE Transactions on Magnetics, 2009, 45, 1400-1403.	2.1	24
7	Computational Homogenization for Laminated Ferromagnetic Cores in Magnetodynamics. IEEE Transactions on Magnetics, 2013, 49, 2049-2052.	2.1	24
8	Experimental Extraction of Winding Resistance in Litz-Wire Transformers—Influence of Winding Mutual Resistance. IEEE Transactions on Power Electronics, 2019, 34, 6736-6746.	7.9	22
9	Nonlinear Computational Homogenization Method for the Evaluation of Eddy Currents in Soft Magnetic Composites. IEEE Transactions on Magnetics, 2014, 50, 61-64.	2.1	19
10	Fast Multipole Acceleration of the Hybrid Finite-Element/Boundary-Element Analysis of 3-D Eddy-Current Problems. IEEE Transactions on Magnetics, 2004, 40, 1278-1281.	2.1	17
11	A Perturbation Approach for the Modeling of Eddy Current Nondestructive Testing Problems With Differential Probes. IEEE Transactions on Magnetics, 2007, 43, 1289-1292.	2.1	16
12	Finite Element Magnetic Models via a Coupling of Subproblems of Lower Dimensions. IEEE Transactions on Magnetics, 2010, 46, 2827-2830.	2.1	16
13	Stochastic Uncertainty Quantification of the Conductivity in EEG Source Analysis by Using Polynomial Chaos Decomposition. IEEE Transactions on Magnetics, 2010, 46, 3457-3460.	2.1	16
14	Finite Element Computational Homogenization of Nonlinear Multiscale Materials in Magnetostatics. IEEE Transactions on Magnetics, 2012, 48, 587-590.	2.1	16
15	Time-Domain Finite-Element Modeling of Thin Electromagnetic Shells. IEEE Transactions on Magnetics, 2008, 44, 742-745.	2.1	15
16	Stochastic Uncertainty Quantification of Eddy Currents in the Human Body by Polynomial Chaos Decomposition. IEEE Transactions on Magnetics, 2012, 48, 451-454.	2.1	15
17	Subproblem Approach for Thin Shell Dual Finite Element Formulations. IEEE Transactions on Magnetics, 2012, 48, 407-410.	2.1	15
18	Subdomain Perturbation Finite-Element Method for Skin and Proximity Effects. IEEE Transactions on Magnetics, 2008, 44, 738-741.	2.1	14

#	Article	IF	Citations
19	Surface-Impedance Boundary Conditions in Time-Domain Finite-Element Calculations Using the Magnetic-Vector-Potential Formulation. IEEE Transactions on Magnetics, 2009, 45, 1280-1283.	2.1	14
20	Using a Jilesâ€Atherton vector hysteresis model for isotropic magnetic materials with the finite element method, Newtonâ€Raphson method, and relaxation procedure. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2017, 30, e2189.	1.9	14
21	Solving Nonlinear Circuits With Pulsed Excitation by Multirate Partial Differential Equations. IEEE Transactions on Magnetics, 2018, 54, 1-4.	2.1	14
22	A Model Reduction Algorithm for Solving Multiple Scattering Problems Using Iterative Methods. IEEE Transactions on Magnetics, 2011, 47, 1470-1473.	2.1	13
23	An Amplitude Finite Element Formulation for Multiple-Scattering by a Collection of Convex Obstacles. IEEE Transactions on Magnetics, 2010, 46, 2963-2966.	2.1	12
24	Subâ€domain finite element method for efficiently considering strong skin and proximity effects. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2007, 26, 974-985.	0.9	11
25	Computation of Induced Fields Into the Human Body by Dual Finite Element Formulations. IEEE Transactions on Magnetics, 2012, 48, 783-786.	2.1	11
26	Finite Element Small-Signal Simulation of Electromagnetic Devices Considering Eddy Currents in the Laminations. IEEE Transactions on Magnetics, 2017, 53, 1-8.	2.1	11
27	Perturbation finite-element method for magnetic circuits. IET Science, Measurement and Technology, 2008, 2, 440-446.	1.6	10
28	Correction of Thin Shell Finite Element Magnetic Models via a Subproblem Method. IEEE Transactions on Magnetics, 2011, 47, 1158-1161.	2.1	10
29	Reduced-Order Model Accounting for High-Frequency Effects in Power Electronic Components. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	10
30	Synthesis of an array antenna for hyperthermia applications. IEEE Transactions on Magnetics, 2000, 36, 1696-1699.	2.1	9
31	Fast multipole accelerated finite element-boundary element analysis of shielded induction heaters. IEEE Transactions on Magnetics, 2006, 42, 1407-1410.	2.1	9
32	Analysis of perforated magnetic shields for electric power applications. IET Electric Power Applications, 2009, 3, 123.	1.8	9
33	Finite-Element Homogenization of Laminated Iron Cores With Inclusion of Net Circulating Currents Due to Imperfect Insulation. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	9
34	Surface-Impedance Boundary Conditions in Dual Time-Domain Finite-Element Formulations. IEEE Transactions on Magnetics, 2010, 46, 3524-3531.	2.1	8
35	A Finite Element Subproblem Method for Position Change Conductor Systems. IEEE Transactions on Magnetics, 2012, 48, 403-406.	2.1	8
36	Frequency-domain homogenization for impedance characterization of litz-wire transformers in 2-D finite element models. , 2016, , .		8

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37	h- and a-formulations for the time-domain modelling of thin electromagnetic shells. IET Science, Measurement and Technology, 2008, 2, 402-408.	1.6	7
38	Influence of contact resistance on shielding efficiency of shielding gutters for high-voltage cables. IET Electric Power Applications, 2011, 5, 715.	1.8	7
39	Time-Domain Surface Impedance Boundary Conditions Enhanced by Coarse Volume Finite-Element Discretisation. IEEE Transactions on Magnetics, 2012, 48, 631-634.	2.1	7
40	Homogenization Methods in Simulations of Transcutaneous Energy Transmitters. IEEE Transactions on Magnetics, 2014, 50, 1017-1020.	2.1	7
41	Inclusion of a Direct and Inverse Energy-Consistent Hysteresis Model in Dual Magnetostatic Finite-Element Formulations. IEEE Transactions on Magnetics, 2016, 52, 1-4.	2.1	7
42	Eddy-Current-Effect Homogenization of Windings in Harmonic-Balance Finite-Element Models. IEEE Transactions on Magnetics, 2017, 53, 1-4.	2.1	7
43	Stabilized Reduced-Order Model of a Non-Linear Eddy Current Problem by a Gappy-POD Approach. IEEE Transactions on Magnetics, 2018, 54, 1-8.	2.1	7
44	Active-Damping Virtual Circuit Control for Grid-Tied Converters With Differential-Mode and Common-Mode Output Filters. IEEE Transactions on Power Electronics, 2020, 35, 7583-7595.	7.9	7
45	Closed€form complex permeability expression for proximity€effect homogenisation of litz€wire windings. IET Science, Measurement and Technology, 2020, 14, 287-291.	1.6	7
46	Coupled mechanical€electrostatic FE€BE analysis with FMM acceleration. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2004, 23, 876-884.	0.9	6
47	Three€dimensional finite element modeling of inductive and capacitive effects in micro€coils. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2006, 25, 642-651.	0.9	6
48	A perturbation approach for the modelling of eddy current nondestructive testing problems with differential probes. , 0, , .		6
49	Nonlinear Time-Domain Finite-Element Modeling of Thin Electromagnetic Shells. IEEE Transactions on Magnetics, 2009, 45, 976-979.	2.1	6
50	Electrostatic Analysis of Moving Conductors Using a Perturbation Finite Element Method. IEEE Transactions on Magnetics, 2009, 45, 1004-1007.	2.1	6
51	Frequency-domain homogenization for litz-wire bundles in finite element calculations. , 2016, , .		6
52	Notice of Removal: Electrical machine analysis using free software. , 2017, , .		6
53	Eddy-Current-Effect Homogenization of Windings in Harmonic-Balance Finite-Element Models Coupled to Nonlinear Circuits. IEEE Transactions on Magnetics, 2018, 54, 1-4.	2.1	6
54	Time-Domain Finite-Element Eddy-Current Homogenization of Windings Using Foster Networks and Recursive Convolution. IEEE Transactions on Magnetics, 2020, 56, 1-8.	2.1	6

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55	Localized iterative generalized multipole technique for large two-dimensional scattering problems. IEEE Transactions on Antennas and Propagation, 2001, 49, 961-970.	5.1	5
56	Magnetic model refinement via a perturbation finite element method â€" from 1D to 3D. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2009, 28, 974-988.	0.9	5
57	Proper orthogonal decomposition versus Krylov subspace methods in reduced-order energy-converter models. , 2016, , .		5
58	Efficient Simulation of DCâ€"DC Switch-Mode Power Converters by Multirate Partial Differential Equations. IEEE Journal on Multiscale and Multiphysics Computational Techniques, 2019, 4, 64-75.	2.2	5
59	A perturbation finite element method for modeling moving conductive and magnetic regions without remeshing. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2007, 26, 700-711.	0.9	4
60	An Iterative Finite Element Perturbation Method for Computing Electrostatic Field Distortions. IEEE Transactions on Magnetics, 2008, 44, 746-749.	2.1	4
61	Multidisciplinary Learning through Implementation of the DVB-S2 Standard. IEEE Communications Magazine, 2017, 55, 124-130.	6.1	4
62	Timeâ€domain homogenization of multiturn windings based on RL Cauer ladder networks. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2020, 33, e2649.	1.9	4
63	Application of the fast multipole method to the 2D finite elementâ€boundary element analysis of electromechanical devices. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2003, 22, 659-673.	0.9	3
64	Application of the fast multipole method to hybrid finite elementâ€"boundary element models. Journal of Computational and Applied Mathematics, 2004, 168, 403-412.	2.0	3
65	Finite Element Modeling of Electrostatic MEMS Including the Impact of Fringing Field Effects on Forces. , 0, , .		3
66	Subdomain perturbation finite element method for skin and proximity effects in inductors. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2008, 27, 72-84.	0.9	3
67	Subproblem approach for modeling multiply connected thin regions with an h-conformal magnetodynamic finite element formulation. EPJ Applied Physics, 2013, 64, 24516.	0.7	3
68	Finite Element Modeling of Electrostatic MEMS Including the Impact of Fringing Field Effects on Forces. Sensor Letters, 2008, 6, 115-120.	0.4	3
69	Electric circuit element boundary conditions in the finite element method for full-wave passive electromagnetic devices. Journal of Mathematics in Industry, 2022, 12, .	1.2	3
70	Correction of thin shell finite element magnetic models via a subproblem method. , 2010, , .		2
71	A computational technique for iron losses in electrical machines. , 2016, , .		2
72	Time-domain homogenization of litz-wire bundles in FE calculations. , 2016, , .		2

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73	Time-Domain Reduced-Order Modelling of Linear Finite-Element Eddy-Current Problems via RL-Ladder Circuits. Mathematics in Industry, 2018, , 231-239.	0.3	2
74	Matrix Interpolation-Based Reduced-Order Modeling of a Levitation Device With Eddy Current Effects. IEEE Transactions on Magnetics, 2018, 54, 1-7.	2.1	2
75	Multiscale Finite Element Modeling of Nonlinear Magnetoquasistatic Problems using Magnetic Induction Conforming Formulations. Multiscale Modeling and Simulation, 2018, 16, 300-326.	1.6	2
76	Time-Domain Homogenization of Foil Windings in 2-D Axisymmetric Finite-Element Models. IEEE Transactions on Power Delivery, 2021, 36, 1264-1269.	4.3	2
77	Hyperbolic Basis Functions for Time-Transient Analysis of Eddy Currents in Conductive and Magnetic Thin Sheets. IEEE Transactions on Magnetics, 2021, 57, 1-10.	2.1	2
78	A Perturbation Method for Computing Field Distortions due to Conductive Regions with H-Conform Magnetodynamic Finite Element Formulations. , 0, , .		1
79	A Perturbation Method for the 3D Finite Element Modeling of Electrostatically Driven MEMS. , 2007, , .		1
80	<i>h</i>â€•and <i>b</i>â€•conform finite element perturbation techniques for nondestructive eddy current testing. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2008, 27, 319-327.	0.9	1
81	A Perturbation Method for the 3D Finite Element Modeling of Electrostatically Driven MEMS. Sensors, 2008, 8, 994-1003.	3.8	1
82	Analyzing and reducing error in 2-D frequency domain homogenization of windings for R, L parameters FE computation. , 2010, , .		1
83	Modeling of a magnetic shunt and an aluminum screen using the perturbation finite element method. , 2010, , .		1
84	Combining surface impedance boundary conditions with volume discretisation in time-domain finite-element modeling. , 2010, , .		1
85	A comparison of virtual circuit-based control designs for half-bridge converters with LCL output filters. , 2017, , .		1
86	Systematic control design for half-bridge converters with LCL output filters through virtual circuit similarity transformations. , 2017, , .		1
87	Influence of 2D and 3D meshes in FE computation of eddy-current losses in surface PMSMs. , 2017, , .		1
88	Multirate PWM balance method for the efficient field-circuit coupled simulation of power converters. Journal of Mathematics in Industry, 2019, 9, .	1.2	1
89	Efficient simulation of DCâ€AC power converters using multirate partial differential equations. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2020, 33, e2683.	1.9	1
90	Identification of high-frequency parameters of an inset PM motor including eddy currents. , 2016, , .		1

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91	Directive beam expansions for the generalized multipole technique. Microwave and Optical Technology Letters, 1999, 22, 382-387.	1.4	0
92	Far-Field Decoupled Basis for the Method of Moments-2d cAse - Abstract. Journal of Electromagnetic Waves and Applications, 1999, 13, 1529-1530.	1.6	0
93	Time-Domain Homogenisation of Windings in 2D FE Calculations. , 0, , .		0
94	Perturbation technique for the finite element modelling of differential probes in non-destructive eddy-current testing. IET Science, Measurement and Technology, 2007, 1, 25-29.	1.6	0
95	A perturbation finite element method for modeling electrostatic MEMS without remeshing. , 2008, , .		0
96	Finiteâ€element analysis of a shielded pulsedâ€current induction heater. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2010, 29, 1585-1595.	0.9	0
97	Electrokinetic Model Refinement Via a Perturbation Finite-Element Methodâ€"From 2-D to 3-D. IEEE Transactions on Magnetics, 2010, 46, 2839-2842.	2.1	0
98	A model reduction algorithm for solving multiple scattering problems using iterative methods. , 2010, , .		0
99	Refinement of inductor models via a subproblem finite element method. , 2010, , .		0
100	Influence of contact resistance on shielding efficiency of shielding gutters for HV cables. , 2010, , .		0
101	Solving multirate partial differential equations using hat finite element basis functions. , 2016, , .		0
102	Eddy-current-effect homogenization of windings in harmonic balance finite element models. , 2016, , .		0
103	POD-versus a physics-based parameterized model-order-reduction technique accounting for movement. , 2016, , .		0
104	Existence results for the A â€" Ï† â€" B magnetodynamic formulation of the Maxwell system with skin and proximity effects. Applicable Analysis, 2020, , 1-19.	1.3	0
105	Capacitance Computation of Multi-Turn Windings via Elementary Neighbor-Conductor Models. IEEE Journal on Multiscale and Multiphysics Computational Techniques, 2021, 6, 125-131.	2.2	0
106	Perturbation finite element method for magnetic circuits. , 2008, , .		0
107	H- and A-time-domain formulations for the modeling of thin electromagnetic shells. , 2008, , .		0
108	Magnetic Model Refinement via a Coupling of Finite Element Subproblems. Mathematics in Industry, 2012, , 137-141.	0.3	0

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109	POD-Based Reduced-Order Model of an Eddy-Current Levitation Problem. Mathematics in Industry, 2018, , 219-229.	0.3	0
110	*RL*-Ladder Circuit Models for Eddy-Current Problems With Translational Movement. IEEE Transactions on Magnetics, 2022, 58, 1-4.	2.1	0