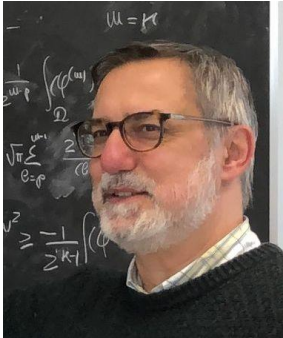


PERSONAL INFORMATION

Daniele Funaro

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Sex Male | Date of birth 07/08/1958 | Nationality Italian

POSITION Full Professor of Numerical Analysis, University of Modena and Reggio Emilia (from 1995)

PREVIOUS POSITIONS

INDAM fellowship (1981-1982)

Researcher (Analysis), University of Pavia (1983 -1992)

Associate Professor of Analysis, University of Pavia (1992 -1995)

EDUCATION AND TRAINING

Degree in Mathematics, University of Pavia (1981)

ADDITIONAL INFORMATION

Director of the Computer Centre, University of Modena (1997-2000)

Chairman of the Department of Mathematics, University of Modena (2000-2007)

RESEARCH

Numerical techniques for the approximation of partial differential equations, with particular emphasis on high-order methods.

Applications to the following model problems: Vlasov-Poisson equations, Navier-Stokes equations, simulation of electromagnetic waves and solitons.

Relevant keywords: spectral methods, domain decomposition methods, preconditioning, treatment of boundary layers, models in electromagnetism, waves in toroid cavities.

BOOKS (MONOGRAPHS)

Polynomial Approximation of Differential Equations, Lecture Notes in Physics, Volume 8, Springer-Verlag, Heidelberg 1992, p. X+303. ISBN: 978-3-662-13878-6

Spectral Elements for Transport-Dominated Equations, Lecture Notes In Computational Science and Engineering, Volume 1, Springer-Verlag, New York 1997, p. X+212. ISBN: 978-3-540-62649-7

Electromagnetism and the Structure of Matter, World-Scientific, Singapore, 2008, p. XII+190. ISBN: 978-981-281-451-7

From Photons to Atoms -The Electromagnetic Nature of Matter, World-Scientific, Singapore, 2019, p. XII+282. ISBN: 978-981-120-423-4

RECENT PAPERS

D. Funaro, E. Kashdan, Simulation of Electromagnetic Scattering with Stationary or Accelerating Targets, *International Journal of Modern Physics C*, Vol. 26, n. 7 (2015), pp. 1-16. DOI: 10.1142/S0129183115500758, arXiv:1305.5116v1 .

L. Fatone, D. Funaro, Optimal Collocation Nodes for Fractional Derivative Operators, *SIAM J. Scientific Computing*, Vol. 37, n. 3 (2015), pp. A1504-A1524. DOI: 10.1137/140993697 , arXiv:1407.0552

L. Fatone, D. Funaro, Isospectral Domains for Discrete Elliptic Operators, *J. of Scientific Computing*, (2017), pp. 1-22. DOI: 10.1007/s10915-017-0541-5 , arXiv:1803.11108

G. Manzini, D. Funaro, G. L. Delzanno, Convergence of Spectral Discretizations of the Vlasov-Poisson System, *SIAM J. Numerical Analysis*, Vol. 55, n. 5 (2017), pp. 2312-2335. DOI: 10.1137/16M1076848, arXiv:1612.08013

D. Funaro, A Model for Ball Lightning Derived from an Extension of the Electrodynamics Equations, *Proc. VI Int. Conf. on Atmosphere, Ionosphere, Safety (Kaliningrad 2018)*, ISBN 978-5-9971-0491-7, arXiv:1806.05555

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D. Funaro, High Frequency Electrical Oscillations in Cavities, *Mathematical Modelling and Analysis*, Vol. 23, n. 3 (2018), pp. 345-358, DOI: 10.10386/mma.2018.021, arXiv:1807.06421

L. Fatone, D. Funaro, G. Manzini, A Semi-Lagrangian Spectral Method for the Vlasov-Poisson System based on Fourier, Legendre and Hermite Polynomials, *Communications on Applied Mathematics and Computation*, Vol. 1, n. 3 (2019), pp. 333-360, DOI: 10.1007/s42967-019-00027-8, arXiv:1807.02418

D. Funaro, Electromagnetic Waves in Annular Regions, *Applied Sciences*, MDPI, Vol. 10, n. 5 (2020), p. 1780, DOI: 10.3390/app10051780

L. Fatone, D. Funaro, G. Manzini, A, On the Use of Hermite functions for the Vlasov-Poisson System, *proc. ICOSAHOM (London 2018)*, *LNCSE*, Vol. 134 (2020), pp. 143-153, DOI: 10.1007/978-3-030-39647-3

A. Chiolerio, L. Diazzi, D. Funaro, Highly Directive Biconic Antennas Embedded in a Dielectric, *Applied Sciences*, MDPI, Vol. 10, n. 24 (2020), p. 8828, DOI: 10.3390/app10248828