

Navid Dianati

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Personal

- Born 09-13-1984, Talesh, Iran.

Education

- PhD, Physics, University of Michigan Ann Arbor, 2006-Present.
 - MA, Physics, University of Michigan Ann Arbor, 2008.
- MA, Applied Mathematics, University of Michigan Ann Arbor, Expected 2011.
- BA, Physics, Sharif University of Technology, Tehran, Iran, 2002-2006.
- Highschool: Allame Helli (National Organization for the Development of Exceptional Talents), Tehran, Iran, 2001

Awards and Accomplishments

- *Ruzbeh Award* for best student research project in Physics, from the Physical Society of Iran, 2000.
- *Silver medal* at the Iranian national Physics Olympiad, 2001.
- *2nd rank*, National university matriculation exam, Foreign languages group, 2002.

Skills

- Computer languages: C++, Java, Pascal, Delphi, Perl, HTML, \LaTeX .
- Web scripting languages: PHP, Javascript.
- Technical Software: Matlab, Mathematica.
- Other Computer skills: Linux OS, Unix shell scripting, Wordpress web publishing.
- Languages: Persian (Native), English (Fluent).

Projects

- An experimental and computational phenomenology of chemical diffusion, 1999. (*Won the Ruzbeh Award, The Physical Society of Iran*)
- A numerical study of the properties of highly designable protein structures, 2003-2004.
- Dynamical modelling of neural activity in the visual cortex, visual hallucinations. 2005-2006. (*School of Cognitive Sciences, IPM, Tehran, Iran*)

Work Experience

- Teacher Assistant, Quantum Mechanics II, Sharif University of Technology, Tehran, Iran. 2003.
- Graduate Student Instructor, Elementary Physics Lab, University of Michigan. 2006-2009
- Teaching mentor for incoming Teacher Assistants, ELI-CRLT GSI training course, University of Michigan, August 2008.

Advanced Courses

- Quantum Field Theory I and II.
- Advanced Statistical Mechanics.
- Advanced Quantum Mechanics I, II.
- Discrete Stochastic Processes 526.
- Condensed Matter Physics.
- Asymptotic Analysis 557.
- Functional Analysis 556.
- Differential Equations and Nonlinear Dynamics 558.
- Numerical Methods in Linear Algebra 571.
- Numerical Methods for solving ODEs and PDEs 572.
- Analysis II (Measure Theory) 597.
- Advanced Ordinary Differential Equations (Topological methods, Geometric Mechanics) 658.
- Mathematical Fluid Mechanics 654.

Presentations and Activities

- 2010 Tutorial School on Fluid Dynamics: Topics in Turbulence, University of Maryland College Park, May 24-28, 2010.
- Visiting Scholar, Geophysical Fluid Dynamics Program, Woods Hole Oceanographic Institution 2010 and 2011.
- Finite-Dimensional Models for Porous-Medium Convection Using a Priori Adapted Bases from Upper-Bound Theory, Presented talk at SIAM Conference on Analysis of Partial Differential Equations, San Diego, November 2011.

Publications

- G. P. Chini, N. Dianati, C. R. Doering, Z. Zhang, A priori model reduction using upper bound theory *Physica D* Vol. 240, pages 241-248 (2011)
- B. Wen, N. Dianati, E. Lunasin, G. P. Chini, C. R. Doering, New upper bounds and reduced dynamical modeling for Rayleigh–Bénard convection in a fluid saturated porous layer, *Communications in Nonlinear Science and Numerical Simulation*, Available online 7 July 2011, ISSN 1007-5704, 10.1016/j.cnsns.2011.06.039.