

CURRICULUM VITAE
MOHAMMAD REZA RAZVAN

Department of Mathematical Sciences
Sharif University of Technology
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Personal

PLACE OF BIRTH: Tehran, Iran.
DATE OF BIRTH: May 15, 1975.
NATIONALITY: Iranian

Education

- Ph.D. in Dynamical Systems, Sharif University of Technology, 1990-2000.
- Ph.D. Dissertation: "*Conley Index and Critical Point Theory*".
- Advisor: Prof. Mahmoud Hesaaraki
- M.S. in Mathematics, Sharif University of Technology, 1997-1998.
- B.S. in Mathematics, Sharif University of Technology, 1993-1997.

Research Experiences

- Institute for Studies in Theoretical Physics and Mathematics (IPM), Tehran, Iran.
Mathematical Biology Research Group, April 2010-present.
- Research Institute of Petroleum Industry, RIPI, Tehran, Iran
Reservoir Simulation Research Group, Feb 2002-Sep 2006
- Institute for Studies in Theoretical Physics and Mathematics (IPM), Tehran, Iran.
Post-Doctoral Fellowship, Sep 2000-Sept 2002
Resident Researcher, Apr 1997-Aug 2000
- The Abdus Salam International Center for Theoretical Physics (ICTP), Trieste, Italy.
Research Fellowship, Mar-Oct 2001.

Teaching Experiences

- Assistant Professor in Applied Mathematics, Sharif University of Technology, Tehran, Iran, 2004-present.
- Assistant Professor in Applied Mathematics, Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran, 2002-2004.

Interests

- Differential Equations and Dynamical Systems.
- Biomathematics, Dynamics of Biological Systems.

Honors and Achievements

- Young Mathematician Award, IPM, 2003.
- IPM Graduate Fellowship, 1998-2000.
- Ranked 3rd in the graduate entrance exam.
- IPM Undergraduate Fellowship, 1993-1997.
- Award of the top student of Mathematics at Sharif University of Technology, 1996.
- Silver medal of the International Mathematical Olympiad (IMO), July 1993.

Papers

- "Global Dynamics of a Differential Susceptibility Model" with S.Yasaman, International Journal of Biomathematics **5** (2012).
- "Global Analysis of a Model of Differential Susceptibility Induced by Genetics" with S.Yasaman, Nonlinear analysis: Real World Applications 12 (2011), 2183–2197.
- "Global Analysis of an SAIS Model" with S.Yasaman, Journal of Biological Dynamics (2011), 1-8.
- "*Global Stability of a Deterministic Model for HIV Infection in Vivo*" with M.Deaghan and M. Nasri, Chaos, Solitons and Fractals 34 (2007) 1225–1238
- "*Multiple Equilibria for an SIS Epidemiological System*", with A. Katanforoush, to appear.
- "*On the Poincare index of Isolated Invariant Sets*", with M. Fotouhi, to appear, preprint math.DS/0102142.
- "*Multiple Equilibria for an SIRS Epidemiological System*", preprint math.CA/0101051.
- "*The Dynamics of a Vertically Transmitted Disease*", J. Prime Research, **3** (2007), 201-209.
- "*Palais-Smale Conditions, Index Pairs and Critical Point Theory*", preprint math.DS/0006203.
- "*Lusternik-Schnirelmann Theory for a Morse Decomposition*", SEABM, **29** (2005), 1131-1138.
- "*Some Relations among Lusternik-Schnirelmann Categories*", SEABM, **28** (2004), 539-546.
- "*On Conley's Fundamental Theorem of Dynamical Systems*", Int. J. Math. Math. Sci. (2004), 1397-1401.
- "*Analysis of a Disease Transmission model in a Population with two Groups of Infectives*", Meth. Appl. Anal. **9** (2002) 119-126.
- "*Relative Ljusternik-Schnirelmann Category of Index Pairs and Applications to Critical Point Theory*, Proceedings of the 31st Iranian Mathematical Conference, (Tehran, 2000), 50-55.
- "*The Dynamics of HIV/AIDS Transmission in an Open Environment*", with M. Hesaaraki, Proceedings of the 31st Iranian Mathematical Conference, (Tehran, 2000), 84-107.

- “*Lusternik-Schnirelmann Theory and Conley Index, a noncompact version*”, Asian J. Math. **4** (2000), 383-390.

TALKS

- “Mathematical Models in Epidemiology”, IPM, Tehran, Iran, Feb 2010.
- “Periodic Solutions in Neuronal Models” Sharif University, Nov 2009.
- “Topological Indices in Dynamical Systems”, IPM, Tehran, Iran, Oct 2009.
- “Canards in Neuronal Models”, IPM, Tehran, Iran, Aug 2008.
- “*Particle-Mesh Method for water-flooding Problem with Multiple Injection/Production Wells*”, International Workshop on Efficient Techniques for Numerical Solutions of Coupled PDE’s and Applications to Reservoir Simulation, IPM, Tehran, Iran, Dec 2003. (Invited)
- “*On The Poincare Index of Isolated Invariant Sets*”, 34th Iranian Math Conference, Shahrood University, Shahrood, Iran. (Invited)
- “*Deformation in Manifolds*”, Conference on Geometry and Topology, Amir-Kabir University, Tehran, Iran, Feb 2003. (Invited)
- “*Morse Theory for Flows on Metric Spaces*”, IASBS, Zanjan, Iran, Mar 2002.
- “*Index Filtration and Gradient-like flows*”, IPM, Tehran, Iran, Feb 2002.
- “*Infinitely many Homoclinic Orbits for Planar Vector Fields*”, Workshop On Dynamical Systems, ICTP, Trieste, Italy, Aug 2001.
- “*Duality in Lusternik-Schnirelmann Theory*”, ICTP, Trieste, Italy, Apr 2001.
- “*Unifying Index Theories for Flows*”, IPM, Tehran, Iran, Nov 2000.
- “*Index Pairs and Their topological Properties*”, IPM, Tehran, Iran, Oct 2002..
- “*Topological Methods in Dynamical Systems*”, Tarbeyat Modarres University, Tehran, Iran, Oct 2002.
- “*Conley Index and Critical point Theory*”, University of Tehran, Tehran, Iran, June 2000.

Applied Math Courses

- Ordinary Differential Equations
- Dynamical Systems
- Partial Differential Equations
- Numerical Methods in PDE’s
- Finite Element Methods
- Mathematical Aspects of CFD
- Hyperbolic Conservation Laws
- Mathematical Modeling
- Mathematical Biology
- Mathematical Neuroscience
- Mathematical Control Theory
- Advanced Engineering Mathematics
- Numerical Analysis

Conferences

- Mathematical Neuroscience, August 12-17, IPM, Tehran, Iran, 2008 (Organizer)
- 8th Conference on Differential Equations and Dynamical Systems, Isfahan University of Technology, Isfahan, Iran, (Scientific Committee)
- 7th Conference on Differential Equations and Dynamical Systems, Tabriz University, Tabriz, Iran, (Scientific Committee)
- 6th Conference on Differential Equations and Dynamical Systems, IASBS, Zanjan, Iran, (Scientific Committee)
- 3rd Conference on Topology and Geometry, Azarbaijan University, Tabriz, Iran, July 2004 (Scientific Committee)
- Mathematical Control Theory, Classical versus Quantum Control, IASBS, Zanjan, Aug 2003. (Organizer)