

Curriculum Vitae

Personal:

- Last Name: Ejtehadi
 - First Name: Mohammad Reza
 - Date of birth: 04.04.1964 (1343/Farvardin/15)
 - Place of birth: Tehran, Iran.
 - Nationality: Iranian.
 - Marital status: Married.
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Contact:

Department of Physics and Astronomy

University Of British Columbia

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Post-Secondary Education:

- Ph.D. in Physics
Soft Condensed Matter Physics,
"Equilibrium Structures of Heteropolymers and Inter-monomer Interactions"
Sharif University of Technology, Tehran, Iran 1998.
 - Master of Science
Theoretical Physics,
"Spin and Geometry of Random Walk"
Tehran University, Tehran, Iran 1992.
 - Bachelor of Science
Physics,
Tehran University, Tehran, Iran 1987.
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Employment Record:

- "University of British Columbia", Vancouver, Canada, Research Associate in theoretical biophysics group, Current position.
- "Max-Planck Institute for Polymer Research", Mainz, Germany, 1999 - 2002, Post Doctoral
- "Institute for studies in Theoretical Physics and Mathematics", Tehran, Iran, 1998 - 1999, Assistant Professor

- "Institute for studies in Theoretical Physics and Mathematics" , Tehran, Iran, 1994 - 1998, Ph.D. Researcher
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Research Interests:

- Soft Condensed Matter Physics
 - Physics of Biological Macromolecules
 - Complex Systems
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Simulation and Computer knowledge and experiences:

1. Monte-Carlo Simulations
 2. Molecular Dynamics Simulations
 3. Dynamics of non-equilibrium systems
 4. Numerical computations
 5. Object oriented programming in C++
 6. Mathematica
 7. AMBER, Molecular Dynamics simulation software for biomolecules
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Teaching Experiences:

1. Supervising two undergraduate projects
University of British Columbia, Canada (present).
 2. Supervising five under graduate and two Master of Science projects.
Three of them have won the national prizes for the best physics under graduate study of the year (In three different years) , Dr. Hessabi Prize.
Sharif University of Technology, Tehran, Iran (1997-1999).
 3. Conceptual Basic Physics (Mechanics, Electricity and Optics)
Teaching in preparing programs of Iranian Physics Olympiad Teams, 1992 - 1999 .
 4. Computational Methods and Simulations,
Three semesters in Sharif University of Technology, Tehran, Iran.
 5. General Physics III,
Three semesters in Sharif University of Technology, Tehran, Iran.
 6. Spatial Relativity,
One semester in AzZahra University, Tehran, Iran.
 7. Tutorial Physics 102
One term in UBC, Vancouver, Canada.
 8. Tutorial Physics 153
One term in UBC, Vancouver, Canada.
 9. Tutorial Physics 100,
One term in UBC, Vancouver, Canada.
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Other activities:

1. Organized the Biophysics group meeting in "Department of Physics and Astronomy, University of British Columbia", Vancouver, Canada, 2002 -present.
2. Reviewed articles for several prestigious research journals: Physical Review Letters, Physical Review E, Journal of Physical Chemistry, and Biophysical Journal.

3. Director of Physics library in "Institute for studies in Theoretical Physics and Mathematics", Tehran, Iran, 1998 - 1999.
 4. Member of Iranian Physics Society since 1984.
 5. Member of scientific organizing committee of annual *Iranian Physics Education Conference*, 1994 - 1998.
 6. Member of national committee of *Iranian Physics Olympiad*, 1992 - 1999.
 7. Associate editor of "*Roshd e Physic*" journal (An Iranian physics education journal in Farsi), 1997-1999.
 8. Head of scientific organizing committee of *Iranian Undergraduate Physics Conference*, 1996 and 1997.
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Meetings, Talks and Presentations:

Up coming presentations:

- Poster Biophysical Society 48th Annual Meeting, Baltimore, USA, February 14-18, 2004
Many-body Interactions Improve Prediction of Rate and Mechanism in Protein Folding Models, M. R. Ejtehadi, S. Avall, S. S. Plotkin
- Invited Lecturer International Conference on Physics, Tehran, Iran, January 6-9, 2004
Theoretical approach to protein folding, M. R. Ejtehadi

Past presentations:

- Talk Biophysics seminar, Simon Fraser University, Canada, April 8, 2003
A generic Model for DNA Deformations at Base-pair Level, M. R. Ejtehadi
- Meeting BioGroup meeting, University of British Columbia, Canada, April 4, 2003
A generic Model for DNA Deformations at Base-pair Level, M. R. Ejtehadi
- Talk Biophysics seminar, University of British Columbia, Canada, June 2002
Coarse-grained Studies of Bio-Macromolecules, M. R. Ejtehadi
- Poster DNA in Chromatin: At the Frontiers of Biology, Biophysics and Genomics. Arcachon, France, March 23-29, 2002
Rigid-body formalism to model DNA on a mesoscopic length scale: the model, M. R. Ejtehadi, B. Mergell and R. Everaers
- Poster DNA in Chromatin: At the Frontiers of Biology, Biophysics and Genomics. Arcachon, France, March 23-29, 2002
Rigid body formalism to model DNA on a mesoscopic length scale: Results, M. R. Ejtehadi, B. Mergell and R. Everaers
- Poster CCP 2001: Conference on Computational Physics 2001, Aachen, Germany, 5-8 September 2001
Rigid-body formalism for simulating Macromolecules, M. R. Ejtehadi, B. Mergell and R. Everaers

- **Invited talk** International Workshop on Protein Folding, Structure and Design, Miramare - Trieste, Italy 11 - 22 June, 2001
The ground states in HP lattice models, M. R. Ejtehad
- **Poster** DNA and CHROMOSOMES: Physical and Biological approaches, Corsica, France, July 31 - August 12, 2000
- **Invited talk** Regional Conference on Mathematical Physics IX, Feza Gursey Institute, Istanbul, Turkey, August 1999
Global results in space of inter-monomer interactions for HP lattice model, M. R. Ejtehad
- **Talk** International school on "Scaling and Disordered Systems", Zanjan, Iran, July 3-14, 1999
A History-Dependent Model for Predator-Prey Problem, R. Gerami and M. R. Ejtehad
- **Short talk** Summer School in Physics of Molecular Biology Krogerup Ho/jskole, Humlebaek, Denmark, 19 - 29 August 1998
- **Poster** International Workshop on Disordered Dynamical Systems, Dresden, Germany, 2 - 6 March, 1998
- **Talk** International Seminar on Disordered Dynamical Systems, Dresden, Germany, 9 March - 9 April, 1998
Shape transition of polyampholytes in two dimensions, M. R. Ejtehad
- **Poster** Monte Carlo Approach to Biopolymers and Protein Folding, HLRZ, Forschungszentrum Jülich, Germany, December 3-5, 1997
Preferred Structures and Monomer-Monomer Interaction, M. R. Ejtehad
- **Talk** VIII Regional Conference on Mathematical Physics. Nor-Amberd, Armenia, 27 June - 4 July, 1997
- **Talk** VII Regional Conference on Mathematical Physics, Caspian Conference, Iran, 1995
Monte Carlo Simulation of Heteropolymers in Two Dimensions, M. R. Ejtehad and S. Rouhani

Publications*:

1. "Modeling DNA Structure, Elasticity and Deformations at the Base-pair Level",
B. Mergell, M.R. Ejtehadi and R. Everaers, Phys Rev E **68**, 021911 (2003).
2. "Interaction Potentials for Soft and Hard Ellipsoids",
R. Everaers and M.R. Ejtehadi, Phys Rev E **67**, 041710 (2003).
3. "Rigid-body Formalism for Simulating Macromolecules",
M.R. Ejtehadi and R. Everaers, Comput Phys Commun **174**, 339 (2002)
4. "Statistical Mechanics of Triangulated Ribbons",
B. Mergell, M.R. Ejtehadi, R. Everaers, Phys Rev E **66**, 011903 (2002)
5. "An Asymmetric Exclusion Model with Overtaking: a numerical and simulation study",
A. Tonddast-Navaei, V. Karimipour and M.R. Ejtehadi, preprint Cond-mat/0010166.
6. "Geometry Selects Highly Designable Structures",
V. Shahrezaei and M.R. Ejtehadi, J. Chem. Phys.. **113**, 6437 (2000).
7. "A History-Dependent Model for Predator-Prey Problem",
Rouzbeh Gerami and Mohammad R. Ejtehadi, "Annual Reviews of Computational Physics VIII", ed. D. Stauffer (World Scientific, 2000).
8. "A History-Dependent Stochastic Predator-Prey Model : Chaos and its Elimination",
Rouzbeh Gerami, Mohammad R. Ejtehadi, The European Physical Journal B **13**, 601 (2000).
9. "Global Results in Space of Inter-Monomer Interactions for HP Lattice Model",
M.R. Ejtehadi, V. Shahrezaei and N. Hamedani, Turk. J. Phys. **24**, 277 (2000).
10. "Protein Ground State Candidates in a Simple Model: An Exact Enumeration",
V. Shahrezaei, N. Hamedani, M.R. Ejtehadi, Phys. Rev. E **60**, 4629 (1999).
11. "Geometrically Reduced Number of Protein Ground State Candidates",
M.R. Ejtehadi, N. Hamedani, V. Shahrezaei, Phys. Rev. Lett. **82**, 4723 (1999).
12. "Field Theory of Skyrme Lattices in Quantum Hall Fromagnets".
M. Abolfath, M.R. Ejtehadi, Phys. Rev. B **58**, 10665 (1998).
13. "Stability of Preferable Structures for a Hydrophobic-Polar Model of Protein Folding",
M.R. Ejtehadi, N. Hamedani, H. Seyed-Allaei, V. Shahrezaei, M. Yahyanejad, Phys. Rev. E **57**, 3298(1998).
14. "Highly Designable Protein Structures and Inter Monomer Interactions",
M.R. Ejtehadi, N. Hamedani, H. Seyed-Allaei, V. Shahrezaei, M. Yahyanejad, J. Phys. A **31**, 6141 (1998).
15. "Preferred Structures and Monomer-Monomer Interaction",
M.R. Ejtehadi, N. Hamedani, H. Seyed-Allaei, V. Shahrezaei, M. Yahyanejad, "Monte Carlo Approach to Biopolymers and Protein Folding", ed. P. Grassberger, G.T. Barkema, W. Nadler, (World Scientific, Singapore, 1998).
16. "A Model Universe With Variable Dimension: Expansion as Decrumpling",
M. Khorami, R. Mansouri, M. Mohazzab and M.R. Ejtehadi, To appear in Int. J. Mod. Phys.

17. "Shape Phase Transition of Polyampholytes in Two Dimensions",
M.R. Ejtehadi, S. Rouhani, preprint IPM-97-152.
18. "Monte Carlo Simulation of Heteropolymers in Two Dimensions",
M.R. Ejtehadi, S. Rouhani, "VII Regional Conference on Mathematical Physics,
Caspian Conference", ed. F. Ardalan, H. Arfaei, S. Rouhani, (IPM, Tehran, 1995).

** The publications in Iranian Journals (Farsi) are not included.*
