Curriculum Vitae

Mehdi Kargarian

Personal Information

Name: *Mehdi* **Last Name:** *Kargarian* **Date of birth:** *11/22/1981* **Nationality:** *Iranian*
Institute: *Department of physics, Sharif University of Technology, Tehran, Iran.*
Phone:*+98-21-66164576*
E-Mail: *mehdi.kargarian@gmail.com* **Web:** *http://sharif.edu/kargarian/*

Current Position

— **Associate Professor**
Department of physics, Sharif University of Technology, Tehran, Iran (Feb. 2022 - now).

— **Assistant Professor**
Department of physics, Sharif University of Technology, Tehran, Iran (Sept. 2017 - Feb. 2022)

Postdoc Positions

— **Postdoctoral Associate**
Department of Physics, Joint Quantum Institute and Condensed Matter Theory Center, University of Maryland, College Park, Maryland, USA (Sept. 2015 - Sept. 2017).
Research group of Prof. Victor. M. Galitski

— **Postdoctoral Fellow**
Center for Emerging Materials and Department of Physics, Ohio State University, Columbus, Ohio, USA (Sept. 2013 - Aug. 2015).
Reseach group of Prof. Mohit Randeria and Prof. Nandini Trivedi

— **Postdoctoral Fellow**
Department of Physics, University of Texas at Austin, Texas, USA (Jan. 2010 - Aug. 2013).
Reseach group of Prof. Gregory A. Fiete

Education

— **Ph.D**
Department of Physics, Sharif University of Technology, Tehran, Iran (Sept. 2006 - Sept. 2009).
Total average grade of courses: 19.72 (of Max 20).
Ph.D in Theoretical Condensed Matter Physics.
Thesis title: *Entanglement, quantum phase transition and topological order.*
Supervisor: Prof. A. Langari
Thesis qualification : Excellent

— **Master of Science**
Department of Physics, Sharif University of Technology, Tehran, Iran (Sep.2004 - Aug.2006).
Total average grade of courses: 18.75 (of Max 20).
M.Sc. in Experimental Condensed Matter Physics.
Thesis title: *On physical properties of NiSi layer.*
Supervisor: Prof. A. Z. Moshfegh - Advisor: Prof. O. Akhavan
Thesis Grade : 19.50

— **Bachelor of Science**
in Physics, Physics Department, Faculty of Science, University of Tehran, Iran (2000-2004).
Total average grade of courses: 18.26 (of Max 20).
Thesis title: *1/N expansion in nonrelativistic quantum mechanics.*
Supervisor: Prof. S. Baygan
Thesis Grade: 20

Research Interests

— **Strongly correlated electron systems**
— **Topological Phases of Matter**
— **Entanglement and Quantum Criticality**
— **Topological orders and Quantum Spin Liquids**
— **Transition Metal Oxides**
— **Topological Quantum Computation**

Honors and Awards

— **ICTP 2020 Prize** (shared), International Center for Theoretical Physics, Trieste , Italy.
— **Dintinguished Teacher**, Sharif University of Technology (2021).
— **Research Award and Grant**, Iran Science Elite Federation (2021).
— **Dintinguished young reseacher in Basic Sciences**, Sharif University of Technology (2020).
— **Research Award and Grant**, Iran Science Elite Federation (2020).
— **Abu-Reyhan Biruni Award**, National Academy of Science, Iran (2019).
— **Research Award and Grant**, Iran Science Elite Federation (2019).
— **Scientific Achievement Award** in International Conference on Superconductivity (2017).
— **Ranked 3** in Khwarizmi national youth festival, Iran (2009).
— **Fellowship** for talented students during PhD, Sharif university of Technology (2008).
— **Fellowship** for talented students during PhD, Sharif university of Technology (2007).
— **Ranked 2** in the National M.Sc. Physics Entrance Exam, Iran (2004).
— **Ranked 1** in the National M.Sc. Photonic Entrance Exam, Iran (2004).
— **Ranked 5** in National Student Physics Olympiad, Iran (2004).
— **Honor student** in Physics Department, University of Tehran, Tehran, Iran (2004).

Preprints

1. Cooper Finnigan, **Mehdi Kargarian**, and Dmitry K. Efimkin, *Equatorial magnetoplasmons* (2022)

Publications

1. Fatemeh Mohammadi, **Mehdi Kargarian**, *Desining $\mathbb{Z}_2$ and $\mathbb{Z}_2\times\mathbb{Z}_2$ topological orders in networks of Majorana bound states*, **Phys. Rev. B 105, 165107 (2022)**.
   https://journals.aps.org/prb/abstract/10.1103/PhysRevB.105.165107
2. Dmitry K. Efimkin, **Mehdi Kargarian**, *Topological spin-plasma waves*, **Phys. Rev. B 104, 075413 (2021)**.
   https://journals.aps.org/prb/abstract/10.1103/PhysRevB.104.075413
3. Bahman Sheikhi, **Mehdi Kargarian**, Abdollah Langari, *Hybrid topological magnon-phonon modes in honeycomb and kagome lattices*, **Phys. Rev. B 104, 045139 (2021)**.
   https://journals.aps.org/prb/abstract/10.1103/PhysRevB.104.045139
4. Bahman Sheikhi, **Mehdi Kargarian**, Abdollah Langari, *Thermal Hall and Nernst responses in ultrathin magnetic films of pyrochlore lattice*, **J. Phys. : Condens. Matter 33 265601 (2021)**.
   https://iopscience.iop.org/article/10.1088/1361-648X/abf976/meta
5. **Mehdi Kargarian**, *Review article: Principles of topology in understanding and development of topological states of matter*, **Iranian J. Phys. Res (2020)**.
   https://ijpr.iut.ac.ir/article_1606_en.html
6. M. Mehdi Jadidi, **Mehdi Kargarian**, Martin Mittendor, Yigit Aytac, Bing Shen, Jacob C. Konig-Otto, Stephan Winnerl, Ni Ni, Alexander L. Gaeta, Thomas E. Murphy, and H. Dennis Drew, *Nonlinear optical control of chiral charge pumping in a topological Weyl semimetal*, **Phys. Rev. B 102, 245123 (2020)**.
   https://journals.aps.org/prb/abstract/10.1103/PhysRevB.102.245123

7. Zahra Khatibi, Roya Ahemeh, **Mehdi Kargarian**, *Excitonic insulator phase and dynamics of condensate in a topological one-dimensional model*, **Phys. Rev. B 102, 245121 (2020)**. https://journals.aps.org/prb/abstract/10.1103/PhysRevB.102.245121
8. Roya Radgohar, **Mehdi Kargarian**, *Effects of dynamical noises on Majorana bound states*, **Phys. Rev. B 102, 165111 (2020)**. https://journals.aps.org/prb/abstract/10.1103/PhysRevB.102.165111
9. Fatemeh Mirmojarabian, **Mehdi Kargarian**, Abdollah Langari, *Phase diagram and thermal Hall conductivity of spin-liquid Kekule-Kitaev model*, **Phys. Rev. B 101, 115116 (2020)**. https://journals.aps.org/prb/abstract/10.1103/PhysRevB.101.115116
10. Hossein Hosseinabadi and **Mehdi Kargarian**, *Vortex bound states of charge and magnetic fluctuations-induced topological superconductors in heterostructures*, **Phys. Rev. B 100, 144507 (2019)**. https://journals.aps.org/prb/abstract/10.1103/PhysRevB.100.144507
11. Rasoul Ghadimi, **Mehdi Kargarian**, S. Akbar Jafari, *Gap-filling states in the nodeless chiral superconducting Bi/Ni bilayer system*, **Phys. Rev. B 100, 024502 (2019)**. https://journals.aps.org/prb/abstract/10.1103/PhysRevB.100.024502
12. Rasoul Ghadimi, **Mehdi Kargarian**, S. Akbar Jafari, *Competing superconducting phases in interacting two-dimensional electron gas*, **Phys. Rev. B 99, 115122 (2019)**. https://journals.aps.org/prb/abstract/10.1103/PhysRevB.99.115122
13. **Mehdi Kargarian**, Yuan-Ming Lu, and Mohit Randeria, *Deformation and Stability of Surface States in Dirac semimetals*, **Phys. Rev. B 97, 165129 (2018)**. https://journals.aps.org/prb/abstract/10.1103/PhysRevB.97.165129
14. Morteza Kayyalha, **Mehdi Kargarian**, Aleksandr Kazakov, Ireneusz Miotkowski, Victor M. Galitski, Victor M. Yakovenko, Leonid P. Rokhinson, Yong P. Chen, *Anomalous low-temperature enhancement of supercurrent in topological-insulator nanoribbon Josephson junctions : evidence for low-energy Andreev bound states*, **Phys. Rev. Lett. 122, 047003 (2019)**. https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.122.047003
15. Victor Galitski, **Mehdi Kargarian**, and Sergey Syzranov, *Dynamo Effect and Turbulence in Hydrodynamic Weyl Metals*, **Phys. Rev. Lett. 121, 176603 (2018)**. Editors' Suggestion. https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.121.176603
    — Featured in Physics ; See Synopsis : *Weyl Metals as Proxies for Astrophysical Dynamos* https://physics.aps.org/synopsis-for/10.1103/PhysRevLett.121.176603
16. X. X. Gong, **M. Kargarian**, A. Stern, D. Yue, H. X. Zhou, X. F. Jin, V. Yakovenko, V. Galitski, and J. Xia, *Time-reversal-symmetry-breaking Superconductivity in Epitaxial Bi/Ni Bilayer Films*, **Science Advances 3, e1602579 (2017)**.
17. Cody Youmans, Areg Ghazaryan, **Mehdi Kargarian**, Pouyan Ghaemi, *Odd-frequency Pairing in the Edge States of Superconducting Pnictides*, **Phys. Rev. B 98, 144517 (2018)**. https://journals.aps.org/prb/abstract/10.1103/PhysRevB.98.144517
18. Saeed S. Jahromi, Roman Orus, **Mehdi Kargarian**, and Abdollah Langari, *Infinite projected entangled-pair state algorithm for ruby lattices*, **Phys. Rev. B 97, 115161 (2018)**. https://journals.aps.org/prb/abstract/10.1103/PhysRevB.97.115161
19. **Mehdi Kargarian**, Dmitry K. Efimkin, and Victor Galitski, *Amperean pairing at the surface topological insulators*, **Phys. Rev. Lett. 117, 076806 (2016)**. http://journals.aps.org/prl/abstract/10.1103/PhysRevLett.117.076806
20. **Mehdi Kargarian**, Mohit Randeria and Yuan-Ming Lu, *Are the double Fermi arcs of Dirac semimetals topologically protected ?*, **PNAS vol. 113 no. 31, 8648 (2016)**. http://www.pnas.org/content/113/31/8648
21. **Mehdi Kargarian**, Mohit Randeria and Nandini Trivedi, *Theory of Kerr and Faraday rotations in Topological Weyl Semimetals*, **Scientific Reports 5, 12683 (2015)**. http://www.nature.com/articles/srep12683

22. Saeed S. Jahromi, **Mehdi Kargarian**, S. Farhad Masoudi, Abdollah Langari, *Topological spin liquids in the ruby lattice with anisotropic Kitaev interactions*, **Phys. Rev. B 94, 125145 (2016)**. http://journals.aps.org/prb/abstract/10.1103/PhysRevB.94.125145
23. **Mehdi Kargarian** and Gregory A. Fiete, *Topological Crystalline Insulators in Transition Metal Oxides*, **Phys. Rev. Lett 110, 156403 (2013)**. http://journals.aps.org/prl/abstract/10.1103/PhysRevLett.110.156403
24. J. Liu, **M. Kargarian**, M. Kareev, B. Gray, P. Ryan, J. W. Freeland, J. M. Rondinelli, G. A. Fiete, and J. Chakhalian, *Heterointerface engineered electronic and magnetic phases of* $NdNiO_3$ *thin films*, **Nature Communications 4, 2714 (2013)**. http://www.nature.com/ncomms/2013/131106/ncomms3714/full/ncomms3714.html
25. Alexander B. Khanikaev, S. Hossein Mousavi, Wang-Kong Tse, **Mehdi Kargarian**, Allan H. MacDonald, Gennady Shvets, *Photonic Topological Insulators*, **Nature Materials 12, 233 (2013)**. http://www.nature.com/nmat/journal/v12/n3/full/nmat3520.html
See also news in sciencedaily: http://www.sciencedaily.com/releases/2012/12/121221123508.htm
*This paper has been selected by Nature in the collection of ten research papers to celebrate the award of the **2016 Nobel Prize** in Physics : http ://www.nature.com/collections/fwsytynlwg
26. **Mehdi Kargarian** and Gregory A. Fiete, *Multi-orbital Effects on Thermoelectric Properties of Strongly Correlated Materials*, **Phys. Rev. B 88, 205141 (2013)**. http://journals.aps.org/prb/abstract/10.1103/PhysRevB.88.205141
27. **M. Kargarian**, A. Langari, Gregory A. Fiete. *Unusual magnetic phases in the strong interaction limit of two-dimensional topological band insulators in transition metal oxides*, **Phys.Rev. B 86, 205124 (2012)**. http://journals.aps.org/prb/abstract/10.1103/PhysRevB.86.205124
28. **M. Kargarian**, *Implementation of single-qubit and CNOT gates by anyonic excitations of two-body topological color code*, **Phys. Lett. A 376, 3540 (2012)**. http://www.sciencedirect.com/science/article/pii/S0375960112010511
29. Saeed S. Jahromi, **M. Kargarian**, S Farhad Masoudi, Kai Phillip Schmidt, *Robustness of a topological phase : Topological color code in parallel magnetic field*, **Phys. Rev. B 87, 094413 (2013)**. http://journals.aps.org/prb/abstract/10.1103/PhysRevB.87.094413
30. Saeed S. Jahromi, S Farhad Masoudi, **M. Kargarian** and Kai Phillip Schmidt, *Quantum phase transitions out of a* $\boldsymbol{z}_2 \times \boldsymbol{z}_2$ *topological phase*, **Phys. Rev. B 88, 214411 (2013)**. http://journals.aps.org/prb/abstract/10.1103/PhysRevB.88.214411
31. **M. Kargarian**, Jun Wen and Gregory A. Fiete. *Competing Exotic Topological Insulator Phases in Transition Metal Oxides on the Pyrochlore Lattice with Distortion*, **Phys.Rev. B 83, 165112 (2011)**. http://journals.aps.org/prb/abstract/10.1103/PhysRevB.83.165112
32. **M. Kargarian** and Gregory A. Fiete. *Topological phases and phase transitions on the square-octagon lattice*, **Phys. Rev. B 82, 085106 (2010)**. http://journals.aps.org/prb/abstract/10.1103/PhysRevB.82.085106
33. Xiang Hu, **M. Kargarian** and Gregory A. Fiete. *Topological insulators and fractional quantum Hall effect on the ruby lattice*, **Phys. Rev. B 84, 155116 (2011)**. http://journals.aps.org/prb/abstract/10.1103/PhysRevB.84.155116
34. Jun Wen, **M. Kargarian**, Abolhassan Vaezi and Gregory A. Fiete. *Doping the Kane-Mele-Hubbard model : A Slave-Boson Approach*, **Phys. Rev. B 84, 235149 (2011)**. http://journals.aps.org/prb/abstract/10.1103/PhysRevB.84.235149
35. Gregory A. Fiete, Victor Chua, **M. Kargarian**, Rex Lundgren, Andreas Ruegg, Jun Wen, Vladimir Zyuzin. *Topological Insulators and Quantum Spin Liquids*, **Physica E 44, 845 (2012)**. http://www.sciencedirect.com/science/article/pii/S1386947711004061
36. **M. Kargarian**, H. Bombin, M.A. Martin-Delgado. *Topological Color Codes and Two-Body Quantum Lattice Hamiltonians*, **New Journal of Physics,12 (2010) 025018**. http://iopscience.iop.org/1367-2630/12/2/025018

37. H. Bombin, **M. Kargarian** and M. A. Martin-Delgado. *Interacting Anyonic Fermions in a Two-Body Color Code Model*, **Physical Review B 80,075111 (2009)**.
http://journals.aps.org/prb/abstract/10.1103/PhysRevB.80.075111

38. H. Bombin, **M. Kargarian** and M. A. Martin-Delgado. *Quantum 2-Body Hamiltonian for Topological Color Codes*, **Fortsch.Phys.57 :1103-1110 (2010)**.
http://onlinelibrary.wiley.com/doi/10.1002/prop.200900084/abstract

39. **M. Kargarian**, *Finite temperature topological order in 2D topological color codes*, **Physical Review A 80,012321 (2009)**.
http://journals.aps.org/pra/abstract/10.1103/PhysRevA.80.012321
— *This paper has also been selected for the August 2009 issue of Virtual Journal of Quantum Information. http ://www.vjquantuminfo.org*

40. **M. Kargarian**, R. Jafari, A. Langari. *Dzyaloshinskii-Moriya Interaction and Anisotropy effects on the Entanglement of Heisenberg Model*, **Phys. Rev. A 79, 042319 (2009)**.
http://journals.aps.org/pra/abstract/10.1103/PhysRevA.79.042319
— *This paper has been selected for the April 27, 2009 issue of Virtual Journal of Nanoscale Science and Technology. http ://www.vjnano.org*
— *This paper has also been selected for the April 2009 issue of Virtual Journal of Quantum Information. http ://www.vjquantuminfo.org*

41. **M. Kargarian**, *Entanglement properties of topological color codes*, **Phys. Rev. A 78, 062312 (2008)**.
http://journals.aps.org/pra/abstract/10.1103/PhysRevA.78.062312

42. **M. Kargarian**, R. Jafari, A. Langari. *The renormalization of entanglement in the anisotropic Heisenberg (XXZ) model*, **Physical Review A 77, 032346 (2008)**.
http://journals.aps.org/pra/abstract/10.1103/PhysRevA.77.032346
— *This paper has been selected for the April 7, 2008 issue of Virtual Journal of Nanoscale Science and Technology.*
— *This paper has also been selected for the April 2008 issue of Virtual Journal of Quantum Information.*

43. R. Jafari, **M. Kargarian**, A. Langari, M.Siahatgar *Phase Diagram and Entanglement of Ising Model With Dzyaloshinskii-Moriya Interaction*, **Phys. Rev. B 78, 214414 (2008)**.
http://journals.aps.org/prb/abstract/10.1103/PhysRevB.78.214414
— *This paper has also been selected for the December 22, 2008 issue of Virtual Journal of Nanoscale Science and Technology. http ://www.vjnano.org*

44. S. Hemmatiyan, M. Rahimi Movassagh, N. Ghassemi, **M. Kargarian**, A. T. Rezakhani, A. Langari, *Quantum phase transitions in the Kondo-necklace model : perturbative continuous unitary transformation approach*, **J. Phys. : Condens. Matter 27 (2015) 155601**.
http://iopscience.iop.org/article/10.1088/0953-8984/27/15/155601/meta

45. **M. Kargarian**, R. Jafari, A. Langari. *Renormalization of concurrence : The application of the quantum renormalization group to quantum-information systems*, **Physical Review A 76, 060304(R) (2007)**.
http://journals.aps.org/pra/abstract/10.1103/PhysRevA.76.060304

46. M. Heidari Saani, **M. Kargarian** and A. Ranjbar, *Comparison between stability, electronic, and structural properties of cagelike and spherical nanodiamond clusters*, **Physical Review B 76, 035417 (2007)**.
http://journals.aps.org/prb/abstract/10.1103/PhysRevB.76.035417
— *This paper has also been selected for the July 30, 2007 issue of Virtual Journal of Nanoscale Science and Technology. http ://www.vjnano.org*

47. **M. Kargarian**, O. Akhavan and A.Z. Moshfegh, *The effect of Si addition and Ta diffusion barrier on growth and thermal stability of NiSi nanolayer*, **Microelecron. Eng. 85 (2008) 548** .
http://www.sciencedirect.com/science/article/pii/S0167931707006910

My Research Group

— Postdocs
  - Dr. Samaneh Ataei (PhD, University of Tehran, Iran), 2022
  - Dr. Roham Baghran (PhD, Shahid Beheshti University, Iran), 2021 - now
  - Dr. Zahra Khatibi (PhD, University of Science and Technology, Iran), 2019-2020
  - Dr. Roya Radgohar (PhD, Shiraz University, Iran), 2019 - 2021

— PhD students
  - Fatemeh Mohammadi (2019)
  - Elahe Davari (2020)
  - Xiaming Zheng (2021)
  - Bahman Sheikhi (co-supervisor, grduated 2021)
  - Fatemeh Mirmojarabian (co-supervisor, grduated 2021)
  - Rasoul Ghadimi (co-supervisor), graduated in 2019

— 8 MSc students
  - 4 students graduated in 2019, 2 graduated in 2020

— 3 BSc students
  - 2 students graduated in 2019

Teaching

— **Spring 2022** : Electromagnetism 3
— **Fall 2021** : Many-body Physics
— **Spring 2021** : Many-body Physics, Electromagnetism 3
— **Fall 2020** : Statistical Mechanics 3
— **Spring 2020** : Electromagnetism 3, General Lab 1
— **Fall 2019** : Many-body Physics, Topology and Matter
— **Spring 2019** : Introductory Condensed Matter, Theory of Superconductivity,
— **Fall 2018** : Many-body Physics
— **Spring 2018** : Introductory Condensed Matter, Theory of Superconductivity,
— **Fall 2017** : Topology and Matter
— **2 Lectures on Many-body Theory**, University of Maryland, Spring 2016.
— **4 Lectures on Group Theory**, The Ohio State University, Summer 2014.
— **TA to many courses**, 2001-2009.

Conferences, Workshops and Seminars

— **ICTP Prize Talk, September 2021**, Talk on " Topological Materials : Correlations and Symmetry".
— **Invited talk at Washington University in Saint Louis, US ; hosted by Prof. Zohar Nussinov**, April 2022, Talk on "Fractionalized superconductors and topological orders".
— **Invited talk at APS March Meeting**, March 2021, Talk on "Nonlinear Optical Control of Chiral Charge Pumping in a Topological Weyl Semimetal".
— **APS March Meeting, Chicago, IL, US**, March 2022. Talk on "Fractionalized superconductors and topological orders".
— **Invited talk at IPM, Iran**, November 2021
— **Invited talk at Shahid Beheshti University, Iran** , December 2021
— **Invited talk, Iran Physics Conference**, Aguest 2021, Talk on "Nonlinear Optical Control of Chiral Charge Pumping in a Topological Weyl Semimetal".
— **Invited talk, 14th National Condensed Matter Conference**, Feb. 2021, Talk on "Nonlinear Optical Control of Chiral Charge Pumping in a Topological Weyl Semimetal".
— **Invited talk at Physics Society of Iran**, October 2020, Talk on "Interacting topological phases of matter".
— **Gordon Research Conference on Topological Phases, Hong-Kong, China**, June 2019.

— **Invited talk at the University of Pennsilvania, US, hosted by Prof. Gene Mele**, Fall 2016. Talk on "Exotic superconducting states in spin-orbit coupled systems".
— **Invited talk at Shahid Beheshti University, Iran** , October 2018
— **Invited talk at IPM, Iran**, July 2018
— **Gordon Research Conference and Seminar on Superconductivity, NH, US**, June 2017.
— **JQI Friday seminar**, Spring 2016. Talk on "Amperean Pairings"
— **Summer School on strongly correlated systems, Minnesota, US**, June 2016.
— **Gordon Research Conference and Seminar, Boston US**, June 2016.
— **APS March Meeting, Baltimore, Maryland, US**, March 2016. Talk on "Amperean pairing at the surface of TI".
— **Princeton Summer School, NJ, US**, June 2015.
— **Workshop on Spin-orbit Coupling and Magnetism in Correlated Transition Metal Oxides, Columbus, Ohio, US** May 2015
— **APS March Meeting, San Antonio, TX, US**, March 2015. Talk on "Topological Kerr and Faraday rotations in TWS".
— **Gordon Research Conference and Seminar, Boston US**, June 2014.
— **Princeton Summer School, NJ, US**, June 2013.
— **APS March Meeting, Baltimore, Maryland, US**, March 22, 2013. Talk on "Unusual magnetic phases of topological band insulators in transition metal oxides".
— **APS March Meeting, Boston, US**, March 2012. Talk on "Mean field phase diagram of (Li,Na)2IrO3 : possible realization of spin liquid phases".
— **APS March Meeting, Dallas, US**, March 2011. Talk on "Topological insulator in a non-Abelian lattice model".
— **Gordon Research Conference, Boston US** June 2010.
— **Nordita program on Quantum Hall physics - Novel systems and applications**, September 2009, Stockholm, Sweden. Talk on "Topological quantum computation models and 2-body quantum lattice Hamiltonians".
— **International Iran Summer School on Quantum Information**, September, 2008, Kish Island, Iran. Poster on "Entanglement in Kondo-Necklace model".
— **Workshop on quantum computation and topological orders**, July 16-20, 2007. El Scorial, Madrid, Spain.
— **International Iran Conference on Quantum Information**, September, 2007, Kish Island, Iran. Talk on "Renormalization of entanglement in quantum spin models".
— **Summer school on strongly correlated electronic systems**, July 2008, IPM, Tehran, Iran.
— **Workshop on strongly correlated electron systems**, Jun 2007, Isfahan University of Technology, Isfahan, Iran.
— **School of Advanced Physics for Top Students, Institute for Advanced Studies in Basic Sciences**, December, 2003 , Zanjan, Iran.

Referee to Journals

— Nature Physics, Nature Communication, Physical Review Letters, Physical Review B, ...