

Curriculum Vitae
Nahid Azimi

Personal Information:

Name: Nahid Azimi

Nationality: Iranian

Gender: Female

Address: Physics Department, Institute for Advanced studies in Basic Sciences (IASBS), Zanzan, Iran.

Positions:

September 2013-Present: Assistant Professor at Physics Department, Institute for Advanced Studies in Basic Sciences, Zanzan, Iran.

April 2011- August 2013: Postdoctoral Fellow, Physics Department, Aveiro University, Portugal.

October 2010- April 2011: Postdoctoral Fellow, Physics Department, Institute for Advanced Studies in Basic Sciences, Zanzan, Iran.

Education:

Ph.D: 2005-2010, Department of Physics, Sharif University of Technology, Tehran , Iran.

Total GPA: 18.41/20.

Thesis Title: Application of Conformal Field Theory in Abelian Sandpile Model.

Supervisors: Dr. S. Moghimi-Araghi, Prof. S. Rouhani.

M.Sc. in condensed matter: 2002-2005, Department of Physics, Institute for Advanced Studies in Basic Sciences (IASBS), Zanzan , Iran.

Total GPA: 17.15/20.

Thesis: Quantum Phase Transition in Spin 1 System at Zero Temperature.

Supervisor: Prof. M.H. Khajepour.

B.Sc.:1998-2002, Department of Physics, University of Tehran, Tehran, Iran.

Total GPA: 16.60/20.

Research Interests:

- Structure and Dynamics of Complex Networks
- Non-linear Dynamical Systems
- Percolation Processes and Epidemic Spreading
- Game Theory
- Critical Phenomena

Publications:

- **N. Azimi-Tafreshi**, H. Dashti -Naserabadi, S. Moghimi-Araghi, “Spatial symmetric two-dimensional continuous abelian sandpile model”, J. Phys. A: Math. Gen 41,435002 (2008).
- **N. Azimi-Tafreshi**, S. Moghimi-Araghi, “Patterned and disordered continuous abelian sandpile model”, Phys. Rev. E 80, 046115 (2009).
- **N. Azimi-Tafreshi**, H. Dashti-Naserabadi, S. Moghimi-Araghi, P. Ruelle, “Abelian sandpile model on honeycomb lattice”, J. Stat. Mech. P02004 (2010).
- H. Dashti-Naserabadi, **N. Azimi-Tafreshi**, S. Moghimi-Araghi, "Statistics of toppling wave boundaries in deterministic and stochastic sandpile models", J. Phys. A: Math. Theor. **45** 045001(2012).
- **N. Azimi-Tafreshi**, S. N. Dorogovtsev, J. F. F. Mendes, “Core organization of directed complex networks”, Phys. Rev. E. **87**, 032815 (2013).
- **N. Azimi-Tafreshi**, S. N. Dorogovtsev, J. F. F. Mendes, “Giant components in directed multiplex networks”, Phys. Rev. E. **90**, 052809, (2014).
- **N. Azimi-Tafreshi**, J. Gomez-Gargenes, S. N. Dorogovtsev, “k-core percolation on multiplex networks”, Phys. Rev. E. **90**, 032816-1 -032816-9, (2014).
- **N. Azimi-Tafreshi**, “Cooperative epidemics on multiplex networks”, Phys. Rev. E. **93**, 042303 (2016).
- M. Saeedian, M. Khaliqi, **N. Azimi-Tafreshi**, G. R. Jafari, M. Ausloos “Memory effects on epidemic evolution: the SIR epidemic model”, Phys. Rev. E. **95**, 022409 (2017).

- M. Saeedian, **N. Azimi-Tafreshi**, G. R. Jafari, and J. Kertesz, “Epidemic spreading on evolving signed networks”, *Phys. Rev. E* **95**, 022314 (2017).
- **N. Azimi-Tafreshi**, S. Osat, S. N. Dorogovtsev, “Generalization of core percolation on complex networks, *Phys. Rev. E* **99**, 022312 (2019).
- M. Khanjaniapak, **N. Azimi-Tafreshi**, C. Castellano, “Competition between vaccination and disease spreading”, *Phys. Rev. E* **101**, 062306 (2020).
- D. Fazli, **N. Azimi-Tafreshi**, “Emergence of oscillations in fixed-energy sandpile models on complex networks”, *Phys. Rev. E* **105**, 014303 (2022).
- M. Khanjaniapak, **N. Azimi-Tafreshi**, J. Gomez-Gardenes, A. Arenas, “Emergence of protective behaviour under different risk perceptions to disease spreading”, *Phil. Trans. R. Soc. A* **380**: 20200412 (2022).
- M. Ghanbarzadeh Noudehi, A. Kargaran, **N. Azimi-Tafreshi**, and G. R. Jafari, “Second- to first-order phase transition: Coevolutionary versus structural balance”, *Phys. Rev. E* **106**, 044303 (2022).
- N. Fardnia, **N. Azimi-Tafreshi**, “Interaction of Two diseases with SIS and SIR dynamics”, *Iranian Journal of Physics Research* **3**, 496 (2022).

Schools and Conferences Attended:

- The Spring School on Theoretical Physics, Institute for Studies in Theoretical Physics and Mathematics (IPM), Tehran, Iran, 2009 (oral presentation).
- European Conference on Complex Systems (ECCS), September 12-16, 2011, University of Vienna, Austria (poster presentation).
- 4th workshop on complex networks (CompleNet), March 13-15, 2013, Institut für Informatik Freie Universität Berlin, Germany (poster presentation).
- International School and Conference on Network Science (NetSci), June 3-7, 2013, Copenhagen, Denmark (oral presentation).
- 20th Annual IASBS Meeting on Condensed Matter Physics, School on Soft matter and

Biological Physics, May 24-28, 2014, Zanjan, Iran (Invited speaker).

- 5th workshop on complex networks (Complenet), March 12-14, 2014, Bologna, Italy (oral presentation).
- International Conference. Complex networks and their interdisciplinary applications. September 16-18 Granada, Spain, 2015 (oral presentation).
- 21st Special School on Physics Topics, 24-29 Bahman 1394, Zanjan, Iran (Invited speaker).
- International “Dynamics Days” Conference. September 2-5 Astana, Kazakhstan, 2016 (invited speaker).
- 10th Conference on Statistical Physics, Soft Matter and Complex Systems, April 24-26 Ardabil, Iran 2018 (invited speaker).
- 10th workshop on complex networks (Complenet), March 18-21, 2019, Tarragona, Spain (oral presentation).
- 27th Special School on Physics Topics, 12-16 Bahman 1398, Zanjan, Iran (Invited speaker).
- Workshop on Complex Networks, School of Physics, IPM 19 February 2020 (30 Bahman 1398) (Invited speaker).
- 27th Annual IASBS Meeting on Condensed Matter Physics, May 18-19, 2022, Zanjan, Iran (Invited speaker).
- 28th Special School on Physics Topics, 17-22 Tir 1402, Zanjan, Iran (Invited speaker).

Honor \ Scholarship:

- IUPAP working group on women in physics, Graduate Scholarship (2010).
 - Ministry of Science, Research and Technology of Iran, Graduate Scholarship (2008).
 - 1st Rank amongst 60 Department Alumni in B.Sc. (2002).
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Computer Skills:

C++, Mathematica, Matlab, LaTeX.

Visiting Position:

July 2014: Visitor in Aveiro University, Complex Network Group, Portugal.

March 2010- July 2010 : Long Term Visitor in School of Physics, Institute of theoretical Physics and Mathematics (IPM), Tehran, Iran.

September 2008 –December 2008: Visiting PhD Student at Universite catholique de Louvain, Belgium.

Supervisor: Prof. Philippe Ruelle.

Referee/Reviewer:

Physical Review Journals (Letters, E),
Applied Network Science Journal,
Journal of Complex Networks,
Iranian Journal of Physics Research

Responsibilities:

- 24th Annual IASBS Meeting on Condensed Matter Physics & School on Complex Systems, June 20-22, 2018 (30 Khordad - 1 Tir 1397) (Chair).
 - 25th Annual IASBS Meeting on Condensed Matter Physics, June 13-14, 2019 (23-24 Khordad 1398) (Chair).
 - Vice President of Physics Department, IASBS, Zanjan (2019-2021).
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Teaching Experience:

- Fundamental Physics I, II and Physics I, II lab, Azad University of Karaj, 2005-2009.

IASBS, Zanjan, Iran (2013-2022):

- Statistical Mechanics I, II, III,
- Classical Electrodynamics I, II,
- Electromagnetic
- Classical Mechanics
- Critical Phenomena
- Non-linear Dynamical Systems
- Complex Networks
- Thermodynamics I, II, III

Group Members:

Mozhgan Khanjaniapak (Postdoc)
Sajjad Hahian (Researcher)
Davood Fazli (PhD)
Masoumeh Ghanbaezadeh (PhD)
Reza Bakhtiyari (PhD)
Mehran Noori (C-PhD)
Sina Larijani (MSc)
Zahra Sabrkar (MSc)

Past Students:

Amin Azimi (PhD)
Erfan Deris (MSc)
Narges Fardnia (MSc)
Peyman Khademolghorani (MSc)
Atiyeh Nezhadranjbar (MSc)
Farshid Gharagozloo (MSc)
Sanaz Gholizadeh (MSc)
Mehdi Shojaee (MSc)
Soodabeh Azhdar (MSc)
Seed Mehri (MSc)
Mozhgan Khanjaniapak (PhD)
Sajjad Hahian (MSc)