

Curriculum Vitae

Personal Information

Surname: Zamani

Name: Farhad

Date of Birth: 16 – 03 – 1974

Place of Birth: Ghaemshahr – Iran

Nationality: Iranian

Gender: Male

Marital Status: Married



Address: Particle Physics Group, Faculty of Physics,
University of Kashan,
8731-751167, Kashan,
Isfahan, I. R. Iran.

Academic Position in University of Kashan:

Assistant Professor of Physics, Jan. 2011 – present.

Head of the Particle Physics Group, Jan. 2012 – present.

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Education:

B.Sc. in physics: Sharif University of Technology, Tehran, 1997.

M.Sc. in physics: Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, 2000.
Thesis: "A Study of the Unruh effect", Supervisor: Dr. Ahmad Shariati.

Ph.D in physics: Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, 2008.
Thesis: "Pseudo-Hermiticity and Relativistic QM of Spin-0 and Spin-1 Fields";
Supervisor: Prof. Ali Mostafazadeh.

Research interests:

- Early Universe Cosmology (Inflation),
 - Particle Physics (Beyond the Standard Model), Neutrino Oscillation,
 - Pseudo-Hermitian Quantum Mechanics (Non-Hermitian Hamiltonians in Relativistic and Non-relativistic Quantum Mechanics) and its application in Quantum Cosmology, Non-Hermitian interactions in QFT and its application.
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Publications and Talks:

- 1) A. Mostafazadeh and F. Zamani: *Quantum Mechanics of Klein-Gordon Fields I: Hilbert Space, Localized States and Chiral Symmetry*, Ann. Phys. (NY) 321 (2006) 2183-2209; [quant-ph/0602151](#).
 - 2) A. Mostafazadeh and F. Zamani: *Quantum Mechanics of Klein-Gordon Fields II: Relativistic Coherent States*, Ann. Phys. (NY) 321 (2006) 2210-2241; [quant-ph/0602161](#).
 - 3) F. Zamani and A. Mostafazadeh: *Quantum Mechanics of Proca Fields*, J. Math. Phys. 50 (2009) 052302.
 - 4) F. Zamani: *Pseudo-Hermitian QM and probabilistic interpretation of first-quantized Klein-Gordon fields*, talk given at 3rd International Workshop on Pseudo-Hermitian Hamiltonians in Quantum Physics, June 20-22, 2005, Koc University, Istanbul, Turkey; <http://home.ku.edu.tr/~amostafazadeh/workshop/Abstract.pdf>
 - 5) Works in preparation: F. Zamani and A. Mostafazadeh: *Quantum Mechanics of a Single Photon*, (Formulations of photon's QM in terms of Potentials, Fields, and Photon's Localization problem, etc.).
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Attended international conferences, workshop and schools:

1. *IPM School on Early Universe Cosmology (IEUC09)*, 7-11 December 2009, Institute for Research in Fundamental Sciences, Tehran, Iran.
 2. *Strings, Branes and Cosmology Conference*, 9 – 13 July 2007, Koc University, Istanbul, Turkey.
 3. *11th Marcel Grossmann Meeting on General Relativity*, 23-30 July 2006, Berlin, Germany.
 4. *3rd International Workshop on Pseudo-Hermitian Hamiltonians in Quantum Physics*, June 20-22, 2005, Koç University, Istanbul, Turkey.
 5. *Mini-School on "Some Recent Development in Relativistic and Non-relativistic Quantum Mechanics"*, June 23-28, 2005, Feza Gursey Institute, Istanbul, Turkey.
 6. *Summer School on Astroparticle Physics and Cosmology*, 17 June - 5 July 2002, the Abdus Salam ICTP, Trieste, Italy.
 7. *Introductory School in String Theory*, 3 - 14 June 2002, the Abdus Salam ICTP, Trieste, Italy.
 8. *Regional Summer School on Group Theory*, 17-26 July, 2000, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran.
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Teaching Experiences:

A: At University of Kashan:

- A1). **Fall 2012:** Advanced Particle Physics, Gravitation I.
- A2). **Spring 2012:** Advanced Quantum Mechanics III, Gen. Physics II.
- A3). **Fall 2011:** Advanced General Relativity, Advanced QM III, and Thermodynamics,
- A4). **Spring 2011:** Group Theory, Introduction to Particle Physics, and Thermodynamics.

At Other Universities:

1. Quantum Mechanics II, Math. Physics I, Math. Phys. For B.Sc. students, and General Physics I, and II, Payam noor university, Tehran (Rey and Parand Branches), Spring 2009, Fall 2009, and Spring 2010.
 2. Relativity and General Physics II, Fall 2008, Zanjan University, Zanjan, Iran.
 3. Quantum Mechanics II, Fall 2008, Sufi Razi Higher Education Institute, Zanjan, Iran.
 4. Differential Geometry (for Continuous Track PhD Students), Fall 2004, IASBS, Zanjan, Iran.
 5. General Physics I, II, III, Fall 2003, Zanjan University, Zanjan, Iran.
 6. General Physics I, II, Fall 2005, & Spring 2006, Islamic Azad University, Zanjan, Iran.
 7. General Physics I, II, Fall 2002, & Spring 2003, Islamic Azad University, Abhar, Iran.
 8. Differential Equation, Fall 2002, Islamic Azad University, Abhar, Iran.
 9. Teaching Assistant for Advanced Classical Mechanics I, II and Classical Mechanics I, II (for Continuous Track PhD Students), IASBS, Zanjan, Iran.
 10. Teaching Assistant for Quantum Mechanics I, II , IASBS, Zanjan, Iran.
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Computer Skills:

Programming Language and Mathematical Software: C++, Mathematica, Maple, Matlab.

Softwares: Microsoft Office, Latex (WinEdit), FarsiTex, TecPlot, TableCurve, Photoshop.

References:

1. **Prof. Ali Mostafazadeh** (PhD thesis' supervisor): Professor of Mathematical Physics, Department of Mathematics, Koc University, Istanbul, Turkey.
E-mail Add.: amostafazadeh@ku.edu.tr
2. **Prof. Mohammad Khorrami**, (MS thesis' advisor): Professor of Physics, Alzahra University, Tehran, Iran.
E-mail Add.: mamwad@yahoo.com, mamwad@mailaps.org
3. **Dr. Ahmad Shariati**, (MS thesis' supervisor): Associate Professor of Physics, Alzahra University, Tehran, Iran.
E-Mail Add.: shariati@mailaps.org