



Name: Mahdi

Last Name: Atashi

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G: Male

Married

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Educational

- ☐ **Bachelor:** Physics, Damghan University, with passing courses on **nuclear physics, particle physics, numerical computation and condensed matter**, Damghan, Iran; (2003-2009)
- ☐ **Master:** Physics - Elementary particles and Field Theories (**numerical approach to phenomenology**), Shahid Beheshti University, Tehran, Iran; (2011-2013)
- ☐ **PhD:** Physics - Particle Physics (**Numerical Holography**), Shahrood University of Technology, Shahrood, Iran; (2013-2018)

Computational Software Ability

- ☐ FORTRAN: Moderate
- ☐ Mathematica: High (xAct and Headrick Packages)
- ☐ MATLAB: Moderate
- ☐ Python: High
 - ☐ Data science
 - ☐ Error Analysis
 - ☐ Numerical Solution of PDEs (especially via spectral methods)
 - ☐ General Relativity Tensor Calculations
 - ☐ Monte Carlo Simulation

Done Numerical Projects

- ❑ Solving differential equations of accretion disks numerically via Shooting method (2008)
 - ❑ Simulation of BF3 detector spectrum via Monte Carlo simulation (2009)
 - ❑ Error analysis in linear distribution in elementary particles quantities (2012-2013)
 - ❑ Numerical solution of Einstein's equations via Spectral methods (2015-2017)
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Talks

- ❑ “Introduction to AdS/CFT correspondence”; Damghan University, Damghan; Dec. 2015
- ❑ “Numerical solution of Einstein's equations via spectral methods from holography”; First Workshop on gravity and particles Eastern North of Iran, Hakim Sabzevari University, Sabzevar; Dec. 2015
- ❑ “Numerical solution of PDEs by spectral methods”; Second school on quark-gluon plasma in holography, Isfahan University of Technology, Isfahan; May. 2016
- ❑ “Holographic evolution of the quark-gluon plasma; numerical computation process”; Damghan University, Damghan; Dec. 2016
- ❑ “Spectral methods in numerical study of non-equilibrium systems”; Second Workshop on gravity and particles Eastern North of Iran, Shahrood University of Technology, Shahrood; Dec. 2016

- ❑ “Isotropisation of the quark-gluon plasma in presence of Gauss-Bonnet corrections”; 7th particles and fields conference, Damghan University, Damghan; Jan. 2017
- ❑ “Isotropisation of the quark-gluon plasma at finite coupling”; IPM, School of particles and accelerators, Tehran; May. 2017
- ❑ “Effect of finite coupling on entropy of the quark-gluon plasma”; 24th Spring conference, IPM, Tehran; May. 2017
- ❑ “Workshop on numerical solution of differential equations by spectral method “ as lecturer ; Ferdowsi university of Mashhad, Mashhad, Iran, April 2019.

Awards

- ❑ 28th rank in 14th undergraduate students physics Olympiad in Iran

Participated Workshops and Conferences

- ❑ 21st Spring conference, IPM, Tehran; May. 2014
- ❑ Quantum Chromo dynamics and quark-gluon plasma workshop; IPM, Tehran; Sep-Oct 2014
- ❑ String school and workshop; IPM, Tehran; Mar. 2015
- ❑ Black hole course by Prof. Sheikh Jabbari; IPM, Tehran; Oct 2014-Feb 2015
- ❑ xAct package workshop; IPM, Tehran; Sep. 2015
- ❑ School on quark-gluon plasma from holography; Tehran University, Tehran; Oct. 2015
- ❑ First Workshop on gravity and particles Eastern North of Iran, Hakim Sabzevari University, Sabzevar; Dec. 2015
- ❑ Second school on quark-gluon plasma in holography, Isfahan University of Technology, Isfahan; May. 2016
- ❑ Recent trends in string theory and related topics; IPM, Tehran; May. 2016

- ❑ Second Workshop on gravity and particles Eastern North of Iran, Shahrood University of Technology, Shahrood; Dec. 2016
 - ❑ Third school on quark-gluon plasma in holography, Shahrood University of Technology, Shahrood; May. 2017
 - ❑ Recent trends in string theory and related topics; IPM, Tehran; May. 2017
 - ❑ 24th Spring conference, IPM, Tehran; May. 2017
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Published Papers

- ❑ Mahdi Atashi, Kazem Bitaghsir Fadafan, Mitra Frahbodnia, "*Holographic energy loss in non-relativistic backgrounds*", **Eur. Phys. J. C (2017) 77:175**, arXiv:1606.09491.
- ❑ Mahdi Atashi, Kazem Bitaghsir Fadafan, Ghadir Jafari, "*Linearized Holographic Isotropization at Finite Coupling*", **Eur. Phys. J. C(2017) 77:430**, arXiv:1611.09295.
- ❑ Mahdi Atashi, Kazem Bitaghsir Fadafan, "*Spiraling String in Gauss-Bonnet Geometry*", **Phys.Lett. B800 (2020) 135090**, arXiv:1906.11621.

Works in progress

- ❑ Finding equation of states in dissipative systems in collaboration with Kazem Bitaghsir Fadafan and Hesam Soltanpanahi Sarabi from South China Normal University (SCNU), Guangzhou, China.
- ❑ Study of equation of state in neutron stars.
- ❑ Study of energy density of light quarks via holography in collaboration with Razieh Morad from Bogazici University, Turkey.
- ❑ Holographic isotropization at finite coupling without linear approximation in collaboration with Kazem Bitaghsir Fadafan and Hesam Soltanpanahi Sarabi.
- ❑ Study of equation of state of QCD in dissipative systems in collaboration with Kazem Bithagsir Fadafan and Hesam Soltanpanahi Sarabi.

Interests

Data Science, Machine learning, Numerical Holography, Out-of-equilibrium physics via holography, Simulations and any other numerical efforts.