Vahid Hosseinzadehjavari CV

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Education

Ph.D. in Physics - Gravitation and Cosmology

University of Mazandaran, Babolsar, Iran, (Sept. 2012 - Aug. 2016)

M.Sc. in Physics - Foundation of Physics

Shahid Bahonar University, Kerman, Iran, (Sept. 2010 - Sept. 2012)

B.Sc. in Physics

University of Mazandaran, Babolsar, Iran, (Sept. 2005 - June 2010)

Positions

Postdoc in Mathematical Physics-Gravity

School of Physics-Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, (September 2018-September 2021)

Publications
citations $\geq$ 125

1. E. Esmaeili, **V. Hosseinzadeh**, p-Form Surface Charges on AdS: Renormalization and Conservation, JHEP 2021 (11), 1-30.

2. E. Esmaeili, **V. Hosseinzadeh**, M. M. Sheikh-Jabbari, Source and response soft charges for Maxwell theory on AdS$_d$, JHEP 2019 (12), 1-34.

3. H. Adami, **V. Hosseinzadeh**, M. M. Sheikh-Jabbari, Sliding surface charges on AdS3, Physics Letters B 806, 135503.

4. **V. Hosseinzadeh**, A. Seraj and M. M. Sheikh-Jabbari, Soft Charges and Electric-Magnetic Duality, JHEP 1808 (2018) 102.

5. K. Nozari, **V. Hosseinzadeh**, and M. A. Gorji, High temperature dimensional reduction in Snyder space, Phys. Lett. B 750 (2015) 218.

6. **V. Hosseinzadeh**, M. A. Gorji, K. Nozari and B. Vakili, Noncommutative spaces and covariant formulation of statistical mechanics, Phys. Rev. D 92 (2015) 025008.

7. K. Nozari, M. A. Gorji, **V. Hosseinzadeh** and B. Vakili, Natural cutoffs via compact symplectic manifolds, Class. Quantum. Grav. 33 (2016) 025009.

8. M. A. Gorji, **V. Hosseinzadeh**, K. Nozari and B. Vakili, Early universe thermostatistics in curved momentum spaces, Phys. Rev. D 93 (2016) 064029.

9. M. A. Gorji, **V. Hosseinzadeh**, K. Nozari and B. Vakili, Photon gas thermodynamics in dS and AdS momentum spaces, J. Stat. Mech. 1607 (2016) 073107.

10. B. Vakili, K. Nozari, **V. Hosseinzadeh**, and M .A. Gorji, Bouncing scalar field cosmology in the polymeric minisuperspace picture. Modern Physics Letters A, 29(32), (2014) p.1450169.

11. **V. Hosseinzadeh**, and K. Nozari, 2018. Covariant statistical mechanics of non-Hamiltonian systems, International Journal of Geometric Methods in Modern Physics, 15(02), p.1850017.

12. M. J. Kazemi, V. Hosseinzadeh, Detection statistics in double-double-slit experiment, Phys. Rev. A 107 (2023), 012223

Funding

- 3 year of research grant from Saramadan'e Elmi Iran (2400 US Dollar per year).

Languages

- Persian (native)
- English (Fluent)

Code Projects

- Defining a criteria for scientific ranking based on concepts in graph theory (we are analyzing the inspirehep.net data but the application can be general). See here where we wrote a python wrapper for getting the data from inspirehep.net API and here where we construct the graphs by networkx module in python.
- I am writing a code in Julia for numerical computations of the SYK model. This will be on the Github soon.
- I am writing a code in Julia (using DifferentialEquantions.jl) for numerical computations of the Bohmian mechanics. This will be on the Github soon.
- I start a machine learning project where using Bohmian Data (related to the previous work) machine learns the states of a many body system. The analysis will be done in Julia using Flux.jl and jax in Python.

Programming Languages Skills

- Database: PostgreSQL
- Python: Scikit-Learn, Pandas, Numpy, Scipy, Tensorflow, Networkx, Matplotlib, ...
- Julia: DifferentialEquations, SparseArrayes, Parallel computation (multithreading, multiprocessing), ...
- Mathematica (Wolfram language): xAct (abstract tensor calculations)

Courses

- Coursera.org Machine learning specialization by Andrew Ng

Academic References

- Mohammad Mehdi Sheikh-Jabbari Professor of School of Physics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran.
  Email: jabbari@theory.ipm.ac.ir
  Tel: +98(21)22280692
- Hamid Reza Afshar Professor, Department of Physics, Ferdowsi University of Mashhad (FUM), Mashhad, Iran.
  Email: ham.afshar@gmail.com
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- Kourosh Nozari Professor, Department of Physics, University of Mazandaran, Babolsar, Iran.
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- Babak Vakili Professor, Department of Physics, Central Tehran Branch, Islamic Azad University, Tehran, Iran.
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