

Mahboobe Moeen Moghaddas

Assistant professor of physics at Kosar university of Bojnord, Iran

PERSONAL DETAILS

Name: Mahboobe Moeen Moghaddas

Date of Birth: 1978

Address: Department of Optics and Laser, Kosar University of Bojnord, Iran

Nationality: Iranian

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EDUCATION

Ferdowsi University, Mashhad, Iran - Ph.D. in Astronomy and Astrophysics (2007-2012)

- Thesis title: Investigating the dynamics of disks around rotating black holes by calculating the slip tensor

Ferdowsi University, Mashhad, Iran - M.A. in Astronomy and Astrophysics (2000-2003)

- Thesis title: Study of the dynamics of self-gravitating accretion disks with beta-pattern fragmentation

Tehran University, Tehran, Iran - B.S. in Atomic and Molecular Physics (1996-2000)

Employment

- 2013- present **Factually member of Kosar University of Bojnord, Iran.**
- 2003–2014 **Part-time Lecturer**, At several Universities in Iran
such as Payame Noor University, Azad
university of Bojnord, Bojnord university, Khayyam university.

Research Interests

- general relativity
- Relativistic accretion disc
- General relativistic fluids
- Relativistic heat flux
- Relativistic viscosity
- Accretion disks around distorted black holes
- Accretion disks and dark energy

Teaching/mentoring experience

2010 - present

relatively skilled at teaching subjects below:

Fundamental Physics.
Quantum physics
General Physics Laboratory.
Wave optics and laboratory.
Geometrical Optics and laboratory
Thermodynamic
Electromagnetism
General relativity
Cosmology

2015 - present

Proficient in mentoring B.Sc. and Ph.D. students.

Title of some theses and projects under my supervision or advice:

- Evolution of relativistic accretion disk using a β -viscosity in tidal disruption events (Ph.D. level).
- Study of the Magnetically Arrested Disk around black holes with the Schwarzschild metric and in the presence of large-scale magnetic fields (Ph.D. level).
- Study of the effects of viscosity on the dynamic structure of a relativistic magnetized disk (Ph.D. level)
- Study of the effects of viscosity on the dynamic of Magnetized Relativistic Astrophysical Jet (Ph.D. level).

- A Study of thin relativistic magnetic accretion disk around a distorted black hole (Ph.D. level).
- A Study of thin relativistic viscose accretion disk around a distorted Kerr black hole (Ph.D. level).

Technical Skills

- **Software development**

Proficient in maple programming for relativistic fluids
Experienced in programming skills in Fortran and Python.

- **Personal skills**

Diligent and motivated in the tasks assigned.
Strong desire to learn and grow and creative to find solution for problems.
Thrives in dynamic research environments, managing multiple projects and collaborating across disciplines to achieve common goals.

Language

- Persian: Native.
- English: Intermediate.

Academic Service

- **Director of the physics Group**, *Kosar University of Bojnord*, (2018–2019).
- **Head of the Student Affairs Office**, *Kosar University of Bojnord*, (2012–2013)
- **Head of the Vice President for Student Affairs** *Kosar University of Bojnord*, (2013–2017)
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- **Head of the Faculty of Technical Engineering and Basic Sciences**, *Kosar University of Bojnord*, (2019-2021).
- **KUB President**, *Kosar University of Bojnord*, (2021–present).

PUBLICATIONS

1. S. Masoud Hoseyni, J Ghanbari, **M Moeen Moghaddas**, “A Study of thin relativistic magnetic accretion disk around a distorted black hole”, *Astrophysics and Space Science*, DoI 10.1007/s10509-025-04444-5
2. S. Masoud Hoseyni, J Ghanbari, **M Moeen Moghaddas**, “A Study of thin relativistic magnetic accretion disk around a distorted black hole”, *arXiv e-prints*, arXiv: 2501.07407 (2025).
3. M. Mousapour Gharghabi, J. Ghanbari, **M Moeen Moghaddas**, “Magnetic Field Evolution for Keplerian and Sub-Keplerian Flows around Non Rotating Black Hole”, *arXiv e-prints*, arXiv: 2408.08406 (2024).
4. M. Moazzen Sorkhi, Z. Ghalenovi, **M Moeen Moghaddas**, “Coupled vector gauge fields in teleparallel scalar-kinetic branes Coupled vector gauge fields in teleparallel scalar-kinetic branes”, *Indian Journal of Physics* 98 (6), 2229-2241 (2024).
5. Z. Ghalenovi, **M. Moeen Moghaddas**, M. Moazzen Sorkhi, “Study of Slowly Rotating Black Hole in Dilatonic Einstein-Gauss-Bonnet Gravity”, *International Journal of Theoretical Physics* (2023).
6. **M. Moeen Moghaddas**, “Conservation equations in the relativistic and non-relativistic fluids with the three mechanisms for energy-momentum transferring”, *Iranian Journal of Physics Research* 22 (1), 31-41 (2021).
7. **M. Moeen Moghaddas**, “Heating and Cooling Studies of Relativistic Accretion Disks Around the Non-Rotating Black with A Simple Model”, *Iranian Journal of Astronomy and Astrophysics* 8 (1), 57-61 (2019).
8. **M. Moeen Moghaddas**, “Energy-momentum tensor of special relativistic fluids and Connection of relativistic and non-relativistic fluids in the new scaling”, *arXiv preprint arXiv:2010.02454* (2020).
9. **M. Moeen Moghaddas**, “Calculating special relativistic viscous stress and heat flux tensors.”, *Iranian Journal of Astronomy and Astrophysics* 5 (2), 117-123 (2018).
10. **M. Moeen Moghaddas**,” Influence of Relativistic Viscosity in the Thermodynamical Quantities in the Accretion Disks Around the Rotating Black Holes”, *Acta Physica Polonica B* 49 (7), 1445 (2018).
11. **M. Moeen Moghaddas**, “Calculation of the relativistic Bulk Viscosity, Shear Viscosity and Shear-Stress Viscosity of Accretion Disks around the Rotating Black Holes”, *arXiv preprint arXiv:1712.02493* (2017).
12. **M. Moeen Moghaddas**, “Calculation of the relativistic bulk tensor and shear tensor of relativistic accretion flows in the Kerr metric.”, *Iranian Journal of Astronomy and Astrophysics* 4 (3), 205-221 (2017).

13. **M. Moeen Moghaddas**, “Bulk viscosity of accretion disks around non rotating black holes”, *Astrophysics and Space Science* 362, 1-8 (2017)

14. **M. Moeen Moghaddas**, J. Ghanbari, A. Ghodsi, “Shear tensor and dynamics of relativistic accretion disks around rotating black holes”, *Publications of the Astronomical Society of Japan* 64 (6), 137 (2012).

Conferences

1. M. Moazzen Sorkhi, M. Moeen Moghaddas,” Non-minimally coupled fermion in the f (T, B) braneworld gravity”, Gravity and Cosmology Conference, Shiraz University, Khajeh Nasiruddin Toosi University of Technology, Tehran, Feb. 2025.

2. M. Moeen Moghaddas,” The effect of the dark energy on the heating of the accretion disks around the no-rotating black holes”, Gravity and Cosmology Conference, Khajeh Nasiruddin Toosi University of Technology, Tehran, Feb. 2025.

3. A. Ghasemi, J. Ghanbari, M.M. Moghaddas,” Investigation the surface density evolution with (TDEs) of the relativistic accretion disk around massive black holes”, 18th national conference on astronomy and astrophysics of Iran, Shiraz University, Feb. 2025.

4. A. Ghasemi, J. Ghanbari, M.M. Moghaddas,” The effect of speed rotation on tidal disruption event using a β -viscosity”, 18th national conference on astronomy and astrophysics of iran, Shiraz University, Feb. 2025.

5. A. Ghasemi, J. Ghanbari, M.M. Moghaddas,” Tidal Disruption Events (TDEs) of Relativistic Accretion Disks Around Massive Black Holes: Luminosity Calculations in Optical Emission”, 17th national conference on astronomy and astrophysics of [ran, Shahidbeheshti University, Tehran, Feb. 2024.

6. M. M. Gharghabi, J. Ghanbari, M.M. Moghaddas,” The effect of particle rotation on the temporal evolution of the magnetic field of the Keplerian fluid around a non-rotating black hole”, 17th national conference on astronomy and astrophysics of Iran, Shahidbeheshti University, Tehran, Feb. 2024.

7. O. Layeghi, J. Ghanbari, M.M. Moghaddas,” The effect of rotation on the flux and half-thickness around a distorted Kerr black hole”, 17th national conference on astronomy and astrophysics of Iran, Shahidbeheshti University, Tehran, Feb. 2024.

8. A. Ghasemi, J. Ghanbari, M.M. Moghaddas,” Investigation of the velocity of returning mass with tidal disruption events (TDEs) of a relativistic accretion disk around a massive

black hole”, 16th national conference on astronomy and astrophysics of Iran, Yazd University, Feb. 2023.

9. M.M. Moghaddas,” Calculating the heating and cooling of the relativistic disk around a non-rotating black hole with a simple model”, 15th national conference on astronomy and astrophysics of Iran, Mazandaran University, Feb. 2022.

10. M.M. Moghaddas,” The effect of heat flux with viscosity on the non-stability accretion disks around the non-rotating black”, 15th national conference on astronomy and astrophysics of Iran, Mazandaran University, Feb. 2022.

11. M.M. Moghaddas,” The effect of heat flux on the accretion disks around the non-rotating black holes with a simple model”, Annual Physics Conference of Iran, Isfahan, Sep. 2021.

12. M.M. Moghaddas,” Energy-momentum tensor of viscosity and heat flux in the relativistic and non-relativistic fluids”, Annual Physics Conference of Iran, Isfahan, Sep. 2021.

13. M.M. Moghaddas,” Vertical Structure of Accretion Disks with Taking into considering all Components of Stress Tensor”, 11th national conference on astronomy and astrophysics of Iran, Ferdowsi University, Mashhad, Feb. 2018.

14. M.M. Moghaddas,” Relativistic Bulk Viscosity in the Accretion Disks around the Rotation Black Holes”, 11th national conference on astronomy and astrophysics of Iran, Sistan and Baluchestan University, Feb. 2017.

15. M.M. Moghaddas,” Calculation of Thermodynamic Quantities for Accretion Disks around the Rotating Black Holes with Bulk Viscosity”, 11th national conference on astronomy and astrophysics of Iran, Sistan and Baluchestan University, Feb. 2017.