

# Seyyed Mojtaba Ghasemi



Gender: Male    Age: 26    Phone: +98 9117731575

Email: mojtabaghasemy@iasbs.ac.ir

Email: s.m.ghasemy2@gmail.com

## Research Interests

- Astrophysics
- N-body Simulations
- Star Clusters
- Astronomy
- Physic of Black-Holes

## Education

- 2008 to 2015  
Middle school and high school, Shahid Beheshti school (SAMPAD), Sari, Iran.
- 2015 to 2021  
PhD track\* student of physics, Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran.
- 2021 to Present  
PhD student of Astrophysics (after the PhD proposal defense), Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran.

## Important Graduate Courses Passed

- Stellar Physics
- Computational Astronomy
  - P. Hut, J. Makino "The Art of Computational Science"
- Galactic Dynamic
  - James Binney, Scott Tremaine "Galactic Dynamic"
- Self-Gravitating Systems
  - L. S. Spark, H. S. Gallagher "Galaxies in the Universe"
- General Relativity
  - Yousef Sobooti "Special and General Relativity"

\* The PhD track (or seamless PhD) program was designed for talented students that can continue both their undergraduate and graduate levels without any other entrance exams and any distraction.

More info at: <https://iasbs.ac.ir/departments/physics/>

- Quantum Mechanics
  - Nouredine Zettili "Quantum Mechanics Concepts"
  - Ramamurti Shankar "Principles of Quantum Mechanic"

## Works and Projects

- BSc Project
  - Analogue Gravity (Acoustic Black-Hole)
  - Hawking Radiation
- PhD Proposal
  - Dark Star Clusters
- PhD Thesis
  - Study the effect of primordial mass-segregation on the formation of dark star clusters

## Publications

- S. Mojtaba Ghasemi, Hosein Haghi, Ali Rostami, and Akram Hasani Zonoozi, " Effects of the Local Density of Clusters on the Formation and Evolution of Dark Star Clusters ", Accepted for ASI conference 2023

## Experiences

- The 23<sup>rd</sup> Physics School, IASBS, Zanjan, Iran, 2018
- The 24<sup>th</sup> Physics School, IASBS, Zanjan, Iran, 2019
- Mercury Pass Observing Event, IASBS, Zanjan, Iran, 2020
- Some general and useful seminars, IASBS, 2016 to 2020
- The 2<sup>nd</sup> Workshop of the Iranian National Observatory (INO; Star Clusters and Initial Mass Function), IASBS, Zanjan, Iran, 2021
- The 3<sup>rd</sup> INO Workshop (Exoplanets and their Identification), Ferdowsi University, Mashhad, Iran, 2022
- The 4<sup>th</sup> INO Workshop (National Conference), INO, Tehran, Iran, 2022
- The 16<sup>th</sup> National Conference of the Astronomical Society of Iran (ASI), Yazd University, Yazd, Iran, 2023

## Skills

- Computer Skills
  - Programming languages
    - C/C++ (good knowledge)
    - Fortran (experienced)
  - Scientific software
    - NBODY6: The state-of-the-art direct N-body code written by Sverre Aarseth et al. (good knowledge)
    - MATLAB (experienced)
  - Operating systems
    - Windows (good knowledge)
    - Linux (experienced)
  - Others
    - Graphic software (3Ds Max) (good knowledge)
    - Graphic software (Photoshop) (experienced)
    - Latex (good knowledge)
- Languages
  - Persian: Native
  - English (American): Professional
  - German: Elementary

## Interests and Hobbies

- 3D modeling and Animating
- Futsal, Table tennis, Soccer, and Mountaineering
- Carpentry

## Achievements

- Ranked 1354<sup>th</sup> (regional rank), and 3948<sup>th</sup> (national rank) in National Universities Entrance Examination, 2015
- Sports
  - Futsal: 2<sup>nd</sup> team rank, Ramadan Sport Festival, IASBS, Zanjan, Iran, 2019
  - Table Tennis: 3<sup>rd</sup> place, Student Sport Festival, IASBS, Zanjan, Iran, 2019

## References

- Dr. Hosein Haghi  
Institute for Advanced Studies in Basic Sciences (IASBS), Znján, Iran
  - Head of the Galactic and Stellar Dynamics (GaSDyn) Research Group
  - IAU member
  - Supervisor
  - Email: [haghi@iasbs.ac.ir](mailto:haghi@iasbs.ac.ir)
  - T: (+98) 24 3315 2124
- Dr. Akram Hasani Zonoozi  
Institute for Advanced Studies in Basic Sciences (IASBS), Znján, Iran
  - Member of the Galactic and Stellar Dynamics (GaSDyn) Research Group
  - IAU member
  - Advisor
  - Email: [a.hasani@iasbs.ac.ir](mailto:a.hasani@iasbs.ac.ir)
  - T: (+98) 24 3315 2121
- Dr. Alireza Ghasemi  
Institute for Advanced Studies in Basic Sciences (IASBS), Znján, Iran
  - PhD in Computational Physics
  - Classical Mechanics lecturer
  - Email: [aghasemi@iasbs.ac.ir](mailto:aghasemi@iasbs.ac.ir)
  - T: (+98) 24 3315 2220

## Personal Information

- Home town: Sari, Iran
- Birthday date: 16 July 1997
- WhatsApp messenger: +98 9117731575
- Telegram: +98 9117731575