

MOHAMMAD JAVAD SHAHHOSEINI



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Research Interests: Multi-wavelength Data, Radio/Infrared Astronomy, Physics of Interstellar Medium, 3D ISM, Dust/Gas Formation and Evolution, Turbulent gas, Magnetic field, Star Formation, Data Analysis, Data Science and Machine learning approaches.

EDUCATION

- **Astrophysics Ph.D. Candidate** | Chalmers University of Technology | 2024 – Present [\[Link\]](#)
Project: 3D ISM: 3D distribution of dust and gas in the Milky Way – ISM Properties - Star formation
Supervisors: Dr. Jouni Kainulainen [\[Link\]](#) – Astronomy and Plasma Division (AoP) – Space, Earth and Environment Department (SEE), Chalmers University of Technology.
- **Physics (Gravity and Cosmology) M.Sc.** | Shahid Beheshti University | 2018 – 2021
Thesis: Radio-FIR correlation in Dwarf irregular galaxies (Magellanic Clouds).
Supervisors: Dr. F. S. Tabatabaei [\[Link\]](#) – School of Astronomy (SoA) - Institute for research in fundamental sciences (IPM), Prof. Dr. S. Nasiri [\[Link\]](#) - (SBU).
- **Physics (Astrophysics) B.Sc.** | Islamic Azad University (IAU) | 2010 – 2016
Project: Variable Stars under the supervision of Prof Dr. Bijan Nikouravan.
Reference: Dr. B. Nikouravan [\[Link\]](#) - (IAU).

RESEARCH EXPERIENCES

- **Research Assistant** | Institute for Research in Fundamental Sciences | 2020 – 2023 [\[Link\]](#)
Project: ISM properties of Dwarf irregular galaxies using multi-wavelength data. Radio-FIR correlation in the Magellanic Clouds.
- **Researcher** | IOTA Middle East section (IOTA/ME) | 2015 – 2018 [\[Link\]](#)
Research area: Physical properties of intrinsic variable stars (Delta-Scuti variables).

TEACHING EXPERIENCES

- **Teaching Assistant** | Shahid Beheshti University (SBU) | 2019 – 2020
Advanced Astrophysics Course for M.Sc. Students. (Prof. Dr. S. Nasiri) | 2020
Astronomy Course for B.Sc. Students. (Prof. Dr. N. Khosravi) [\[Link\]](#) | 2019

TALKS & POSTERS

- Understanding the density PDFs of molecular clouds: the 3D view by Gaia | Poster | [Stellar Origins 2025](#).
- A detailed study of Radio-FIR correlation in The Magellanic Clouds | [IAU-IHOW](#) Radio Astronomy Workshop – IPM and Erciyes University joint program | Contributed Talk | 2023.
- A resolved study of the Radio and far-infrared correlation in the Large Magellanic Cloud | [SPARCS XI](#) | Contributed talk | IDIA – SKAO | Nov 2022
- A detailed study of Radio-FIR correlation in Dwarf irregular galaxies (Magellanic Clouds) | [MW Gaia 2021](#) – Heidelberg University | Poster presentation | 2021.
- Radio-FIR correlation in Dwarf irregular galaxies (Magellanic Clouds) | [EAS 2021 Annual meeting](#) – Leiden University | Poster presentation | 2021.
- Radio-FIR correlation in the Large Magellanic Cloud | [IPM Spring Conference of physics 28th](#) – IPM | Contributed talk | 2020.
- OAC Talk - The Origin of Radio-FIR Correlation in low mass galaxies | IPM | 2020.
- Data Analysis of the High-Amplitude Delta-Scuti Star GSC 4464-924 | [7th International workshop on occultation and eclipse](#) - IOTA/ME | Contributed talk | 2017.
- Intrinsic Variable Stars | [Binary systems and exoplanets workshop](#) - IOTA/ME and CUMO University in Turkey | Invited speaker | 2016.

PROJECTS & PUBLICATIONS

- The Bird's Eye Milky Way: Gaia's view on the density diagnostics of star formation | 3D ISM in the solar neighborhood | Understanding the density PDFs of molecular clouds: 3D vs 2D
- A detailed study of Radio-FIR correlation in Dwarf irregular galaxies (Magellanic Clouds) - in preparation | Planned to be submitted to MNRAS soon.
- Radio-FIR correlation in the Large Magellanic Cloud | IPM Spring Conference of physics 28th – IPM (2020) | [Published Proceeding](#) – Page 31-35.
- [Data Analysis of the High-Amplitude Delta-Scuti Star GSC 4464-924](#) | M.J Shahhoseini, B. Ghobadi Bisetooni, Anthony Ayomamitis, Journal on occultation and eclipse | 2017, JOE4, Page 11-18.
- [Introduction to TTV method](#) | S. J. Jafarzadeh, M. Dalir S harami, M. J. Shahhoseini, Journal on occultation and eclipse | 2016, JOE4, Page 24-28.

WORKSHOPS, SCHOOLS AND COURSES

- [IAU-IHOW](#) Radio Astronomy Workshop – IPM and Erciyes University joint program | Sep 2023
- [Second Regional Astronomical Summer School \(2RASS\)](#) - Bayurakan | Sep 2021
- [ISM of galaxies 2021 Summer school](#) | cnrs and pcmi | Project: (Gas turbulence statistics), supervisors: A. Hughes (IRAP), E. Koch (Harvard-SAO) | July 2021
- [Radio Astronomy Workshop \(RAW\) 2021](#) - IPM | Ranked 1st in the proposal writing campaign | Project: Proposal for Exoplanet observation using ALMA | April 2021

- European Radio Interferometry School 2019 ERS | Chalmers University of Technology | Oct 2019
- Introduction to programming and simulation in MATLAB | Tehran University | 2015

LANGUAGES

- Farsi | Native
- English | Advanced
- Academic IELTS Band-score: 7

HOBBIES

- Amateur Astronomy
- Music production | Graphic Design
- Astrophotography | Photography
- Cooking | Baking

COMPUTER SKILLS & SOFTWARES

- AIPS, CASA, Maxim-DL | Advanced
- Python, LaTeX, Git, BASH | High-Intermediate
- Windows, MacOS, Linux | Advanced
- DS9, TheSky6, Regis-tax, Period4, Table Curve | Advanced
- MATLAB, Mathematica | Intermediate
- Adobe Photoshop, Adobe Illustrator | Advanced
- FL Studio, Adobe Audition | Advanced

HONORS AND AWARDS

- IPM annual grant in Astronomy and Astrophysics for research project "A Detailed study of Radio-FIR correlation in Dwarf Irregular Galaxies (Magellanic Clouds)". (2020-2022)
- Full Scholarship for 2.5-years of the M.Sc. Program. (2018-2020)
- The Winner of Proposal Writing Campaign in Radio Astronomy Workshop (RAW) - IPM. (2021)
- Azad University Varamin-branch Students Astronomical Association Head (2013-2015).

CONFERENCES ATTENDED

- INO Workshop V: Transient events and multi-messenger astrophysics | IPM - July 2022
- The 2022 Midwest Magnetic Fields Meeting | Madison, Wisconsin - May 2022
- INO Workshop IV: Formation, Evolution, and Asteroseismology of Stars | IPM – May 2022
- INO Workshop II: Star formation and Evolution, Interstellar Medium | IPM – Dec 2021
- INO Workshop I: Formation, Evolution, and Structure of Galaxies | IPM – Oct 2021
- SASERAC 2021 - The cold ISM during the epoch of the Reionization | Feb 2021
- SKA Science Conference - A precursor view of the SKA Sky | March 2021
- 14th National Conference on Astronomy and Astrophysics - Semnan University | Feb 2020
- National Conference of Iranian Observatories - Khwarizmi University | Dec 2019
- Baryons in Galaxies and Beyond – IPM | Feb 2019
- 25th Annual Spring Physics Conference - IPM | June 2018
- 34th Annual National Physics Conference - Iranian Physics Society | Aug 2018
- TWAN Astrophotography workshop - Deep Sky Astrophotography | Feb 2018
- Exoplanets and Habitable worlds workshop – ISA Observatory - LOC | Nov 2017

- 24th Annual Spring Physics Conference - IPM | June 2017
- Winter Workshop of IOTA/ME - Asteroseismology and intrinsic parameters | Jan 2016
- 4th IOTA/ME Astronomy Workshop - IOTA/ME | Aug 2015
- Ecliptic binary systems and Exoplanets - IOTA/ME | Feb 2015
- 22nd Annual Spring Physics Conference - IPM | June 2015
- Galaxies Inside and out international Conference - IPM | Jan 2015
- Asteroid Detecting Workshop IASC I Nojum Magazine | April 2015
- Understanding Galaxies, Observational Techniques - IPM | May 2014
- TWAN Astrophotography workshop – Wide field-photography | Feb 2013

OUTREACH & VOLUNTEER

- **Public talks and presentations** | [Astronomy Week Programs](#)
Helioseismology (Solar Harmony) | Intrinsic variable stars (Stars as living objects) | Statistics and Astrophysics (Correlations in astronomy).
- **Citizen Science** | [IASC Campaign & Zooniverse](#)
 - [IASC Campaign](#): Tutor of the Nojum Magazine team in the IASC Asteroid campaign – Iran section. Teaching the Astrometrica software to search for asteroids using Pan-STARRS data for B.Sc. students in Shahid Beheshti University.
 - [Zooniverse \(Galaxy Zoo\)](#): Working with Farzanegan-4 High school students to participating in the Galaxy Zoo project from the Zooniverse portal.
- **Astronomy in social media** | Public events
 - Founder of the Astronomy for Breakfast Club in the [Clubhouse](#). Organized various astronomy and astrophysics-related sessions. Top 3 Astronomy clubs worldwide in 2021. Some events are published in [CastBox](#).

REFERENCES

1. **Dr. Jouni Kainulainen** | jouni.kainulainen@chalmers.se
Associate Professor, Astronomy and Plasma (AoP) division, Space, Earth and Environment (SEE) department, Chalmers University of Technology Gothenburg, Sweden. Tel: +4631772423
2. **Dr. Fatemeh S. Tabatabaei** | ftaba@ipm.ir
Associate Professor, School of Astronomy (SoA), Institute for Research in Fundamental Sciences (IPM), Tehran, Iran. Tel: +982123105069

If **additional references** are required, please contact:

3. **Dr. Sadollah Nasiri Gheidari** | nasiri@iasbs.ac.ir
Professor, Department of Physics, Shahid Beheshti University (SBU), Tehran, Iran. Tel: +982129905046

