

Roya Hamedani Golshan

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Research Interests

- Star Formation
- Astrochemistry and Origin of Life
- Impact of Environmental Condition on Star Formation

Education

- 2019 - 2025 **Ph.D. in Physics** 1st Physics Institute (PH1), University of Cologne (UoC), Germany
- *High-mass star formation across the Large Magellanic Cloud*
 - Supervisors: Prof. Dr. Peter Schilke & Dr. Alvaro Sanchez-Monge
 - funded ~ 200.000 € via DFG founding project
- 2012 - 2015 **M.Sc. in Physics** Isfahan University of Technology (IUT), Iran
- *Star formation history and dust input mass in NGC 147 and NGC 185*
 - Supervisor: Dr. Atefeh Javadi & Prof. Dr. Behrouz Mirza
- 2008 - 2012 **B.Sc. in Physics** IUT
- 2004 - 2008 **Diploma in Mathematics-Physics** BeheshtAien High School, Isfahan, Iran

Further Research Experiences

- 4/2018 - 9/2019 **Internship** PH1, UoC
- *ALMA view of N159 star forming region*
- 11/2017 - 2/2018 **Internship** PH1, UoC
- *Correlation of CII and CO isotopologues in Orion Molecular Cloud*
- 2014 - 2016 **Research Assistant** Institute for Research in Fundamental Sciences (IPM), Iran
- *Star formation history and dust input mass in the Local Group dwarf galaxies*

Supervising & Teaching Experiences

- 4/2021 - 9/2021 **Co-Supervisor of Two Bachelor Theses** PH1, UoC
- *Characterizing the Infrared Emission of Young Stellar Objects (YSOs) in the Milky Way*
 - *Studying the Kinematics of the Gas Around a Hot Molecular Core in the LMC*
- Teaching Assistant**
- 10/2021-2/2022 • *Advanced Astrophysics*, UoC
- 2011 & 2012 • *Basic Quantum Mechanics*, IUT

Proposals Granted Funding or Time

Funding

- 2024 **DFG** ~ 50.000 €, *Molecular complexity in low-metallicity astrophysical environments* (Co-I)
- 2022 **IAU OAD** ~ 3.000 €, *ZagrosRISE- Reviving and Integrating Solar Energy in the Zagros* (Co-I)

Observation

- 2025 **APEX** 10 h, *Confirming molecular gas in the Leading Arm of Magellanic Clouds* (PI)
- 2025 **ATCA** 49 h, *Searching for masers in the outer-Galaxy star forming region G274* (Co-I)
- 2024 **APEX** 27 h, *Hunting molecular gas in the Leading Arm of Magellanic Clouds* (PI)
- 2024 **SOAR** 10 h, *Investigating the impact of metallicity on complex organic chemistry* (Co-I)
- 2024 **ALMA** 4.9 h, *Exploring the chemical composition of the 'organic-rich' hot cores in the LMC* (Co-I)
- 2023 **JWST** 17.8 h, *Ice observations toward low-metallicity hot molecular cores in the LMC* (Co-I)
- 2022 **APEX** 22.7 h, *High-Mass cluster formation in the Magellanic Bridge* (Co-I)
- 2021 **ATCA** 16 h, *The evolutionary sequence of massive dense cores in the LMC* (PI)
- 2019 **ALMA** 3.4 h, *The quest for bona fide hot cores in the LMC* (Co-I)

Skills & Qualifications

Computer

- Programming Languages: Python, C++, Super Mongo(SM), Bash, SQL
- Astronomical Software/Models: CASA, CARTA, DS9
- XCLASS, Paris-Durham Shock Code, Padova Stellar Evolution Models, DUSTY

Languages: Farsi: Mother Tongue - English: Advanced - German: Intermediate

Soft Skills Training & Voluntary Work

Participant (just a small selection)

- 2/2023 (3 days)
Year 2020
- *Communication and negotiation in difficult situations workshop*, UoC
 - *Mentoring program for international female scholars*, UoC

Volunteer

- 2020 - present
8/2022 - present
- *Astronomy on Tap Köln* Astronomy for Public
 - *Ombudsperson at the anti-discrimination board* Physics Department, UoC

Schools, Conferences & Visits

Visitor Student

- 5-6,11-12/2024
7-8/2023
6/2015
- Durham University, Durham, United Kingdom
 - Institute of Space Sciences, Barcelona, Spain
 - ESO, Garching, Germany

Contributed Talks

- 10/2022
6/2015
- *Hot cores with complex chemistry in the LMC Bar*
"From Clouds to Planets II: The Astrochemical Link" Conference
 - *Star formation history in low metallicity dwarf galaxies: NGC 147 and NGC 185*
"Galaxies of Many Colours: Star Formation Across Cosmic Time" Conf.

Poster Presentations

- 1/2021
10/2019
6/2015
- *A census of molecular cores and complex organic molecules in the LMC*
"43rd COSPAR Scientific Assembly, Connecting Space Research for Global Impact" Conf.
 - *Observations of 20 YSOs in the LMC; searching for extra-galactic hot cores*
"ALMA Conference; Science Results and Cross Facilities Synergy" Conf.
 - *Star formation history and feedback from dusty stellar wind: NGC 147 and NGC 185*
"Physics of Evolved Stars" Conf.

Dedicated Grants

- 7/2023
6/2023
6/2022
7/2019
9/2015
7/2015
6/2015
- **ICE & CSIC Grant** "Life Cycle of Dust", Barcelona, Spain
 - **NanoSpace Grant** "COST NanoSpace JWST Training School", IAC-tec, Tenerife, Spain
 - **ÉNS Grant** "Interstellar Shocks" Summer School, Les Houches, France
 - **PROM Grant** to attend "TASQ" Summer School, Nicolaus Copernicus University, Poland
 - **IAU Grant** "ESO/OPTICON/IAU" Summer School, Brno University, Czech Republic
 - **ESO and RadioNet Grant** "Stellar End Products: Low - High Mass Connection" Conf.
 - **RadioNet Grant** "Galaxies of Many Colours: Star Formation across Cosmic Time" Conf.