Anya Samadi Ghadim samadi@mps.mpg.de

Employment History

Senior Data Scientists LATAM Airlines group *Nov. 2020 – Jan. 2020*
Advanced Analytic Group, LATAM building, Las Condes, Santiago (Chile)

- Leading the project: 'Providing a more realistic Zero Fuel Weight estimation (ZFW) for the Flights based on ML models'

Postdoc Researcher *(ALMA-Conicyt fellow)* *Dec. 2018 – Nov. 2020*
Núcleo de Astronomía, UDP, Santiago (Chile)
Supervisor: Dr. Paula Jofré

- Employing the parallax measurements from large spectroscopic surveys (Gaia DR2/ RAVE DR5) and the least model-dependent spectroscopic methods in deriving stellar distances to evaluate the uncertainty of distance measurements for binary/multiple systems compared to single stars
- The pulsation study and stellar/seismic modeling of a Kepler A/F-type binary stars with considerable rotation
- Detecting *roAP* stars from TESS in collaboration with TASOC WG4
- Visiting researcher, Royal Observatory of Belgium (Feb.-Mar. 2020)
- Presentation (Talk) at LARIM XVI conference
- Successful observational proposals for CNTAC
- Online public outreach activities (mostly restating astronomy news in a simple way for public)

Postdoc Researcher *Mar. 2018 - Mar. 2019*
Research Institute for Applied Physics and Astronomy (RIAPA), University of Tabriz, Tabriz (Iran)
Supervisor: Prof. Davood M. Jassur

- studying the hybrid pulsations in fast-rotating double-lined spectroscopic binaries
- Organizing several scientific workshops and conferences at RIAPA, University of Tabriz

Physics Instructor (Permanent) *Sep. 2009 - Jun. 2012*
Payame Noor University, Urmia (Iran)
- *Modules:* Mechanics, Electricity, Introduction to Astronomy, Earth in the space, Waves, English for Physics students, Mechanics & Heat Lab, Electricity Lab, General Physics for engineers

Education

PhD. Physics & Astronomy, *Sep. 2011 - Feb. 2018*
University of Tabriz, Tabriz (Iran)
Supervisor: Prof. Davood M. Jassur; Co-Advisor: Dr. Patricia Lampens
- Thesis title: The Pulsation Study and Light curve Analyses Of Some Kepler γ Doradus(/δ Scuti) Eclipsing Binary Stars *(distinction)*
- Instructor and Teaching Assistant at Physics Faculty, University of Tabriz
- Co-Advisor of two master thesis Physics at Faculty, University of Tabriz
- Visiting Scholar at Royal observatory of Belgium (ROB), Uccle, Belgium (Jul.-Sep.2017)
- International scholar at Institute of Astronomy, KU Leuven, Leuven, Belgium (Apr.-Sep. 2015)

- **MS.C. Physics & Astronomy,** *Sep. 2005 - Oct. 2008*
  University of Zanjan, Zanjan (Iran)
  Supervisors: Prof. Sadollah Nasiri, Prof. Davood M. Jassur
  - Thesis title: The light curve study and period variation in close binary system of AK Her (*distinction)*

- **BS.C. Physics (Solid states Physics)** *Feb. 2000 -Feb. 2004*
  University of Zanjan, Zanjan (Iran)

Observation Experience

SMARTS Telescopes (0.9 m), CTIO, *La Serena, Chile* *Jan. 2020*
- Searching for δ Scuti pulsators in open clusters of Southern sky (6 nights)

Mercator Telescopes (1.2 m), *La Palma, Canary Islands* *Aug. 2015*
- Observing A-F type candidate hybrid variable stars, spectroscopy (12 nights)

Technical Skills

Technologies :
- *Programming* Python
- *SQL* Postgre SQL
- *Big data handling* Deep Learning, Neural Network (CNN, RNN: sequence modeling), Machine learning (TensorFlow (/Keras), Sikit-learn)
- *Astronomy* Time series analysis, Signal processing, MCMC,... binary modeling (PHOEBE, JKTEBOP) Big Data & statistics *familiar:* stellar/seismic modeling with MESA, GYRE
- *Operating systems* Unix (Linux, OSX), Windows

Certifications :
- *Deep Learning Specialization* (coursera online course - six months)
- Google Cloud Platform Big Data and Machine Learning Fundamentals (coursera online course)

Languages:
- English (Fluent)
- Azeri & Farsi (bilingual), Turkish (Fluent), German & Spanish (A2)

Conference Proceedings & Invited Talks (2014 - present)

I. Invited Talks

1. *"Binary stars 'El Dorado', Probing the interior physics of intermediate-mass binary stars through asteroseismology and their distance measurements".* **15 Jul. 2020**, Joint ALMA Observatory (JAO), **ALMA/ESO** office, Santiago, Chile

2. *"Binary stars, the challenge of their distance measurements, pulsation and rotation".* **20 Aug. 2020,** Departamento de Astronomia, Universidad de Chile, **(DAS)** Santiago, Chile

3. *"How tidal forces & rotation show up on the "Hybrid" pulsation of binary systems with intermediate-mass A/F-type companions." ,* **16 Sep. 2020**, The Institute of Astrophysics of Pontificia Universidad Catolica **(PUC)**, Santiago, Chiles

Conference Proceedings & Invited Talks (2014 - present)

II. Poster presentations &Talks (Proceedings)

1. "*The spectroscopic multiplicity fraction in a sample of A/F-Type (Candidate) Hybrid stars from the Kepler mission", Proceedings of stars and their Variability observed from space* **(2020)** 353-354, Vienna (Austria),
2. *Evaluating 'Twin' parallaxes for binary stars* **(Talk)**, *Proceedings of XVI LARIM* **(2020)** BAAA, Vol. 61C, Antofagasta (Chile), **Authored**
3. "Necessary Spectroscopic observations for the study of some challenging Kepler EBS with Hybrid pulsations", 2nd LAMOST-Kepler workshop, Brussels (Belgium), 2017
4. *"KIC 2696703, A Kepler Eclipsing binary system with γDor Pulsations",* KASC9/TASC2, Azores (Portugal), 2016
5. *"Pulsation study and the frequency analysis of a Kepler eclipsing binary star KIC 9159301"* Annual AG Meeting, Bamberg (Germany), 2014

Publications in Peer Reviewed Journals (Total: 6, First author: 4)

https://orcid.org/0000-0002-1577-010X

1. Orbital solutions derived from radial velocities and time delays for four Kepler-systems with A/F-type (candidate) hybrid pulsators
P. Lampens, L. Vermeylen, Y. Frémat, Á. Sódor, M. Skarka, **A. Samadi-Ghadim**, Zs. Bognár, et al. Accepted to publish in ***A&A***, (2021), arXiv:2101.06174

2.KIC 8975515: a fast-rotating (γ Dor - δ Sct) hybrid star with Rossby modes and a slower δ Sct companion in a long-period orbit
Samadi-Ghadim, A., Lampens, P., M. Jassur, D., P. Jofré; ***A&A***, (2020), 638, A57

3. Hybrid Pulsations and Tidal Splitting detected in the Kepler Eclipsing and Spotted Binary System KIC 6048106
Samadi-Ghadim, A., Lampens, P., M. Jassur, D.; ***ActaAstro.,*** (2018), 68 (4), 425–447

4. KIC 6048106: An Algol-type Eclipsing System with Long-term Magnetic Activity and Hybrid Pulsations. I. Binary modeling
Samadi-Ghadim, A., Lampens, P., M. Jassur, D.; ***MNRAS***, (2018), 474 (4), 5549

5. Multi-technique investigation of the binary fraction among A-F type candidate hybrid variable stars discovered by Kepler
Lampens, P., et al. **Samadi-Ghadim, A.** (Co-authored); ***A&A***, (2018), 610, A17

6. Orbital Period Changes and Photometric Study of Contact Binary System AK Her
Samadi-Ghadim, A., M. Jassur, D., Nasiri, S., Gozaliasl, G., Kermani, M. H., Zareie, A.; ***New Astron.*** (2010), 15, 339,342