

# Sareh Ataiee

#### Work and Research experiments

July 2020- present Assistant professor, Faculty of Sciences, Ferdowsi University of Mashhad,, Mashhad, Iran. Apr. 2018- June Postdoctoral research assistant, University of Tübingen, Computational Astrophysics,

- 2020 Tübingen, Germany.
- Dec. 2014- Dec. **Postdoctoral research assistant**, *University of Bern, PlanetS project*, Bern, Switzerland. 2017
- Oct. 2013- Oct. **Postdoctoral research assistant**, *School of Astronomy, IPM*, Tehran, Iran. 2014

#### Education

Oct. 2008- Sep. **Ph.D. in Astrophysics**, *Ferdowsi University of Mashhad*, Iran, Supervisor: Dr. Jamshid 2013 Ghanbari. Adviser (in Germany): Prof. Dr. C.P.Dullemond.

The effect of gas flow on protoplanetary growth (with focus on protoplanetary growth in vortices)

Oct. 2004- June **M.Sc. in Astrophysics**, *Ferdowsi University of Mashhad*, Iran, Supervisor: Dr. Jamshid 2007 Ghanbari.

The Effect of Self-Gravity on The Equilibrium Structure of a Non-Rotating Thick disc.

Oct. 1998- Feb. **B.Sc. in Physics**, *Ferdowsi University of Mashhad*, Iran. 2003

#### Publications

- 2021 **S. Ataiee**, *W. Kley*, Can planets be pushed into a disc inner cavity by a resonant chain?, A&A, 648, A69.
- 2020 **S. Ataiee**, *W. Kley*, The role of disc torques in forming resonant planetary systems, A & A, 635, A204.
- 2020 A. Ziampras, *S. Ataiee*, *W. Kley*, *C.P. Dullemond*, *C. Baruteau*, The effect of a planet's spiral shock heating on the protoplanetary disk structure, A & A, 633, A29.
- 2019 A. Penzlin, *S. Ataiee, W. Kley*, 1:1 orbital resonance of circumbinary planets, A & A, 630, L1.
- 2019 A. Leleu, *G.A.L. Coleman,* **S. Ataiee**, On the stability of the co-orbital resonance under dissipation: Application to the evolution in protoplanetary disks, A&A, 631, A6.
- 2018 N. Brügger, Y. Alibert, S. Ataiee, W. Benz, Metallicity effect and planet mass function in pebble-based planet formation models, A & A, 619, A174.
- 2018 Y. Alibert, *J. Venturini, R. Helled, S. Ataiee, et al.*, Jupiter's formation by hybrid pebbleplanetesimal accretion matches cosmochemical timescale constraints, Nature Astronomy, 2, 873-877.

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- 2017 **S. Ataiee**, *C. Baruteau*, *Y. Alibert*, *W. Benz*, How much does turbulence change the pebble isolation mass for planet formation?, A& A, 615, A110.
- 2018 Y. Alibert, *S. Ataiee*, *J. Venturini*, Planet formation, Migration and Habitability, In: Deeg H., Belmonte J.(eds) Handbook of Exoplanets, Springer, Cham, Online ISBN 978-3-319-39648-3.
- 2017 Pinilla P., *Pérez L. M., Andrews, S., van der Marel N., van Dishoeck E. F.,* **Ataiee S.** et al., A Multi-wavelength Analysis of Dust and Gas in the SR 24S Transition Disk, ApJ, 839, 99.
- 2015 Pohl A., *Pinilla P., Benisty M.,* **Ataiee S.**, Juhasz A., Dullemond C P., Van Boekel R., Henning T., Scattered light images of spiral arms in marginally gravitationally unstable discs with an embedded planet, MNRAS, 453, 1786–1778.
- 2014 Pinilla P., *de Juan Ovelar, M.,* **Ataiee, S.**, Benisty, M, Birnstiel, T., van Dishoeck, E. F., Min, M., Gas and dust structures in protoplanetary disks hosting multiple planets, A&A, 573, A9.
- 2014 Ataiee S., Dullemond C P., Kley W., Regály Zs., Planet-vortex interaction: How a vortex can shepherd a planetary embryo, A&A, 572, A61.
- 2013 Regály Zs., *Sandor Zs., Csomos P., Ataiee S.*, Trapping of giant-planet cores I. Vortex aided trapping at the outer dead zone edge, MNRAS, 433, 2626.
- 2013 Ataiee S., *Pinilla P., Dullemond C P., Dominik C., Ghanbari J.*, Asymmetric transition discs: Vorticity or eccentricity?, A&A, 553, L3.

#### Selected Talks

July 2022 Lecturer, Hands-on Numerical Astrophysics School for Exoplanetary Sciences, Hanau, Germany.

Hydrodynamic modeling of planet-disk interaction and planet migration

- Apr. 2022 Invited talk, *DRAO Seminar Series*, Virtual. Do discs allow the planets get close to their host stars?
- Jan. 2022 Invited talk, Exoplanet and Their identification workshop, Virtual. Protoplanetary discs and planet formation: An overview
- Dec. 2021 Invited talk, Weekly seminars of SOA, IPM, Tehran, Virtual. Can planets get close to their host stars?
- Apr. 2021 Invited talk, Weekly seminars of IASBS, Zanjan, Virtual. Shepherding planets towards their parent stars
- Feb. 2021 **Guest talk**, *Group meeting of Kees Dullemnd in ITA, Heidelberg*, Virtual. Migration of resonant chain close to the disc inner boundary: Comparing hydro and N-body simulations
- Sep. 2020 **Contributed talk**, Annual Meeting of the Astronomische Gesellschaft 2020, Virtual, Germany.

Can planets be pushed into a disc inner cavity by a resonant chain?

- May 2019 **Contributed talk**, *Planetary dynamics*, Heidelberg, Germany. How much can ignoring disc self-gravity in hydrodynamical simulations affect the resonant configuration?
- March 2019 **Contributed talk**, *Planet formation and evolution workshop*, Rostock, Germany. How much does turbulence change the pebble isolation mass for planet formation?
  - Dec. 2018 Astronomy colloquium, University of Tübingen, Tübingen, Germany. Planetary growth by pebble accretion
  - Dec. 2017 Contributed talk, Munich Institute for Astro- and Particle Physics (MIAPP) workshop, Garching bei Münich, Germany.
    FARGO joins Planete: a code for (semi-)simultaneous calculation of planetary growth and 2D disc hydrodynamics

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- Dec. 2015 Lunch seminar, *Exakte Wissenschaften, Bern University*, Bern, Switzerland. How to make a global 2D model of planet formation?
- April 2015 **Contributed talk**, *Seminar on Planetary Sciences*, , *Exakte Wissenschaften*, *Bern University*, Bern, Switzerland. Can a vortex survive at the present of two planets?
- April 2014 **Public talk**, *Weekly seminar, Physics department, Sharif University*, Tehran, Iran. Asymmetric transitional discs: Protoplanetary discs with unusual features
- April 2014 **Contributed talk**, *Weekly seminar, School of Astronomy, IPM*, Tehran, Iran. Planet-vortex interaction: How a vortex can shepherd a planetary embryo
- June 2013 **Contributed talk**, *17th Meeting on Research in Astronomy, Zanjan, Iran*, Zanjan, Iran. Asymmetric transition disks: Vorticity or eccentricity?
- May 2013 Invited talk, *IPM, School of Science*, Tehran, Iran. Transitional discs: modeling the asymmetries

#### Public Talks and Outreach

- May 2021 **Public talk**, *Engarium*, *Mashhad*, Virtual. Let's make a planet!
- May 2021 **Online Chat**, *FUM astro-club, Mashhad*, Virtual. Professional vs. amature astronomy

### Additional Activities

- 2022 SOC chair, Workshop titled "Exoplanet and Their Identification", FUM, Mashdad, Iran.
- 2021 SOC chair, An online crash course on numerical astrophysics, FUM, Mashdad, Iran.
- 2020 Journal reviewer, Referee for MNRAS (x1).
- 2019 Journal reviewer, Referee for MNRAS (x2).
- 2018 Poster presentation, ESO workshop: "Take a closer look", Garching bei Münich, Germany.
- 2018 Journal reviewer, Referee for MNRAS (x1).
- 2017 Poster presentation, Water workshop, Zürich, Switzerland.
- 2016 Poster presentation, Protoplanetary discussion, Edinburgh, UK.
- 2015 **Journal reviewer**, *Referee for ApJ (x1)*.
- 2015 Participation, ERIS 2015: Sixth European Radio Interferometry School, Garching, Germany.
- 2015 Participation, From Protoplanetary Disks to Planet Formation, Les Diablerets, Switzerland.
- 2012 **Participation**, *IMPRS Summer School: Computational Astrophysics Physical Foundations & Numerical Techniques*, Heidelberg, Germany.
- 2011 **Participation**, *IMPRS Summer School 2011*, *Characterizing exoplanets-from formation to atmospheres*, Heidelberg, Germany.
- 2009 Academic Marker, Third International Olympiad of Astronomy and Astrophysics, Tehran, Iran.

## Teaching and Mentoring Experience

- 2018-2020 Journal club organiser, Group Journal club on weekly base., Tübingen University, Germany.
  - 2018 **Co-supervisor**, *MSc student Alex Ziampras*, Tübingen University, Germany, Topic: Planet-Induced Spiral Heating in Radiative Protoplanetary Disks.
  - 2017 **Mentor**, *MSc student Reyhane Nejat*, Ferdowsi University, Mashhad, Iran, Topic: The planet's eccentricity kills the vortex.

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- 2017 **Mentor**, *MSc student Motahare Ghaderi*, Ferdowsi University, Mashhad, Iran, Topic: Can a planet affect a vortex at the outer edge of a deadzone?.
- 2009 Lecturer, Mathematical Methods for Physicists, Payamnour University, Mashhad, Iran.
- 2009 **Teaching assistant**, *Analytical Mechanics II*, Ferdowsi University of Mashhad, Mashhad, Iran.

#### Visits

July 24th- Aug. 13th 2022	Universität Tübingen, Institut für Astronomie & Astrophysik, Germany
June 27th- July 23rd 2022	Heidelberg University, Center for Astronomy, ITA, Heidelberg, Germany
Dec. 9th- Dec. 15th 2016	Institut de Recherche en Astrophysique et Planétologie (IRAP), University of Toulouse, France
Feb. 21th- Feb. 26th 2016	Institut de Recherche en Astrophysique et Planétologie (IRAP), University of Toulouse, France
Oct. 18th- Nov. 6th 2015	Institut de Recherche en Astrophysique et Planétologie (IRAP), University of Toulouse, France
July 1st- Aug. 30th 2014	Heidelberg University, Center for Astronomy, ITA, Heidelberg, Germany
Aug. 15th- Aug. 21st 2014	Leiden Observatory, Leiden, the Netherlands
May 15th-21st 2013	IPM, School of Science, Tehran, Iran
March 2nd-21st 2012	Konkoly Observatory, Budapest, Hungary
July 15th 2011 - March 31st 2013	Heidelberg University, Center for Astronomy, ITA, Heidelberg, Germany. This visit was partly funded by <i>The third funding line of the German Excellence Initiative</i> .

# Computer Skills

OS Linux, Windows Programming fortran 77, C, python Languages

Language Skills

Fluent Persian (native), English Basic Arabic, German