



# Sareh Ataiee

## Work and Research experiments

- July 2020- present **Assistant professor**, *Faculty of Sciences, Ferdowsi University of Mashhad*, Mashhad, Iran.
- Apr. 2018- June 2020 **Postdoctoral research assistant**, *University of Tübingen, Computational Astrophysics*, Tübingen, Germany.
- Dec. 2014- Dec. 2017 **Postdoctoral research assistant**, *University of Bern, PlanetS project*, Bern, Switzerland.
- Oct. 2013- Oct. 2014 **Postdoctoral research assistant**, *School of Astronomy, IPM*, Tehran, Iran.

## Education

- Oct. 2008- Sep. 2013 **Ph.D. in Astrophysics**, *Ferdowsi University of Mashhad*, Iran, Supervisor: Dr. Jamshid 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 2007 **M.Sc. in Astrophysics**, *Ferdowsi University of Mashhad*, Iran, Supervisor: Dr. Jamshid Ghanbari.  
The Effect of Self-Gravity on The Equilibrium Structure of a Non-Rotating Thick disc.
- Oct. 1998- Feb. 2003 **B.Sc. in Physics**, *Ferdowsi University of Mashhad*, Iran.

## Publications

- in prep. **S. Ataiee**, *C. Baruteau*, *W. Kley*, Investigating the corotation torque enhancement for a low-mass planet located around a surface density transition.
- Submitted Z. Afkanpour, **S. Ataiee**, *et al.*, How the planet–disc interaction changes over-stability in planetary systems, Submitted to A& A.
- 2023 A. Yaghoobi, *J. Rosdahl*, *F. Calura*, **S. Ataiee**, On the effects of photoionization feedback on second-generation star formation in globular clusters of different masses, Accepted for publication in MNRAS.
- 2023 J. Korth, *D. Gandolfi*, *J. Subjak*, *S. Howard*, **S. Ataiee**, *et al.*, TOI-1130: A photodynamical analysis of a hot Jupiter in resonance with an inner low-mass planet, A&A, 675, A115.
- 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.

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- 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 pebble-planetesimal accretion matches cosmochemical timescale constraints, Nature Astronomy, 2, 873-877.
- 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

- Aug. 2022 **Contributed talk**, *Formation and Evolution of Planetary Systems*, Tübingen, Germany.  
A closer look at the torque on the planets at the disc inner edge
- 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 Dullemond 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?

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- 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 München, Germany.  
FARGO joins Planete: a code for (semi-)simultaneous calculation of planetary growth and 2D disc hydrodynamics
- 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. amateur astronomy

## Additional Activities

- 2023 **Journal reviewer**, *Referee for MNRAS (x1)*.
- 2022 **Journal reviewer**, *Referee for MNRAS (x1)*.
- 2022 **SOC member**, *Formation and Evolution of Planetary Systems*, Tübingen university, Tübingen, Germany.
- 2022 **SOC chair**, *Workshop titled "Exoplanet and Their Identification"*, FUM, Mashhad, Iran.
- 2021 **SOC chair**, *An online crash course on numerical astrophysics*, FUM, Mashhad, 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 München, 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.

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- 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.

## 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 *The third funding line of the German Excellence Initiative*.

## Computer Skills

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

## Language Skills

- Fluent Persian (native), English
- Basic Arabic, German