# Behzad Tahmasebzadeh, Ph.D.

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## Research Interests

Galaxy Formation and Evolution, Measurement of Black Hole Masses through Stellar/Gas Dynamical Modeling, Secular Evolution in Disk Galaxies.

## Professional Experience

2023-... **Postdoctoral Fellow**, University of Michigan, Ann Arbor, USA.

2017-2023 **Research Assistance**, Shanghai Astronomical Observatory, Shanghai, China.

## Education

2017-23 **Ph.D. in Astrophysics,** Shanghai Astronomical Observatory, Shanghai, China.
Thesis title: "Schwarzschild dynamical modeling of barred galaxies with IFU observation."

2013-16 **M.Sc. in Astrophysics**, Institute for Advanced Studies in Basic Sciences, Zanjan, Iran.
Thesis title: "Inflationary cosmological models in Scalar–tensor gravity".

2009-13 **B.Sc. in Nuclear Physics**, Buali-Sina University, Hamedan, Iran.

## Honors and Awards

2023 **DDA Travel Grant** , 54th Annual Meeting of the Division on Dynamical Astronomy, USA.

2022 **CAS Prize**, awarded as 2022 Excellent International Student among all 114 institutes of the Chinese Academy of Science (CAS).

2017 **CAS-TWAS**, Ph.D. scholarship (most competitive scholarship for study Ph.D. in China).

2016 **First Rank** as a M.Sc graduate student at IASBS.

## Collaboration

2023- • Collaboration for dynamical modeling of 18 compact stellar systems using JWST IFU to measure black hole masses in such low mass galaxies.

• MUSE-TIMER survey associate collaborator (21 nearby barred galaxies with VLT/MUSE IFU)

• FORSTAND software developing collaboration (a code for orbit-superposition dynamical modeling of stellar systems)

2020- • DYNAMITE Software developer team (a code for orbit-superposition dynamical modeling of stellar systems)

2019-2021 • Collaboration visit to MPE (Germany), to develop techniques for dynamical modeling barred galaxies.

## Skills

**Software Development**

I modified the core modules of the DYNAMITE code to be applicable for modeling of barred galaxies.

**Teaching**

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| Lecture | Milky Way Structure (online), Spring 2023, Chengdu University, China. |
| TA | Computational physics for M.Sc students, Spring 2015, IASBS, Iran. |
| Lecture | An introduction on Astrophysics, Spring 2012, BASU, Iran. |

**Services**

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| 2023/24 | Colloquium organizer, University of Michigan, USA. |
| 2023 | LOC, Great Lakes Clusters and Streams, University of Michigan, USA. |
| 2019 | LOC, Summer school on galactic dynamics, Shanghai Astronomical Observatory, China. |
| 2018 | LOC, The life and times of the Milky Way, Shanghai Astronomical Observatory, China. |

## Colloquium/confrances

**Talk & Poster**

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| 2023 | **talk**, "Do Massive Black Holes Come in Small Packages?", University of Michigan colloquium, USA. |
| | **poster**, "Determining the lower mass limit for central black hole masses detectable in the Virgo cluster by JWST NIRSpec". The First Year of JWST Science Conference, STSc, Baltimore, USA. |
| | **talk**, "Schwarzschild Modeling of Barred So Galaxy NGC4371 with TIMER Survey", Galactic bars conference, Granada, Spain. |
| | **talk**, "Schwarzschild Modeling of Barred So Galaxy NGC4371 with TIMER Survey", 54th Annual Meeting of the Division on Dynamical Astronomy, East Lansing, USA. |
| 2022 | **talk**, "Dynamical orbit decomposition of barred galaxies", DYNAMITE workshop, ICRAR, Australia. |
| 2021 | **talk**, "Orbital origin of CX and OX structures in boxy-peanut bulges", Seminar talk, University of Central Lancashire, UK. |
| 2020 | **talk**, "Orbit-based dynamical modeling of external barred galaxies", Dynamics workshop and follow-up on barred galaxies, University of Cambridge, UK. |
| | **talk**, "Schwarzschild modeling of the barred galaxy", DYNAMITE release event (software for dynamical modeling of galaxies), University of Vienna, Austria. |
| 2019 | **talk**, "Deprojection of barred galaxies from photometry", MPE, Germany. |
| | **poster**, "Extract 3D density profile of barred galaxies from image", The art of measuring galaxy physical properties, Milan, Italy. |

## References


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| Prof. Monica Valluri | University of Michigan ✉ mvalluri@umich.edu |
| Prof. Ling Zhu | Shanghai Astronomical Observatory ✉ lzhu@shao.ac.cn |
| Prof. Juntai Shen | Shanghai Jiao Tong University ✉ jtshen@sjtu.edu.cn |
| Prof. Ortwin Gerhard | MPE, Germany ✉ gerhard@mpe.mpg.de |
| Dr. Eugene Vasiliev | University of Cambridge ✉ eugvas@lpi.ru |

References (continued)


Prof. Glenn van de Ven University of Vienna ✉ glenn.vandeven@univie.ac.at

Dr. Dimitri A. Gadotti Durham University ✉ dimitri.a.gadotti@durham.ac.uk


Research Publications

**Journal Articles**


1. **Tahmasebzadeh, Behzad** and et al., "Determining the lower limit of central black hole masses detectable in virgo UCD/cEs using JWST NIRSpec IFU," *in-prep*, 2023.

2. **Tahmasebzadeh, Behzad**, L. Zhu, J. Shen, D. Gadotti, and et al., "Schwarzschild Modeling of Barred So Galaxy NGC4371," *submitted to ApJ*, 2023. arXiv: 2310.00497.

3. **Tahmasebzadeh, Behzad**, L. Zhu, J. Shen, O. Gerhard, and G. v. d. Ven, "Orbit-superposition Dynamical Modeling of Barred Galaxies," *ApJ*, 2022. DOI: 10.3847/1538-4357/ac9df6.

4. S. Thater, P. Jethwa, **Tahmasebzadeh, Behzad**, *et al.*, "Testing the robustness of DYNAMITE triaxial Schwarzschild modelling: The effects of correcting the orbit mirroring," *A&A*, 2022. DOI: 10.1051/0004-6361/202243926.

5. C. Yang, L. Zhu, **Tahmasebzadeh, Behzad**, X.-X. Xue, and C. Liu, "Constructing the Milky Way Stellar Halo in the Galactic Center by Direct Orbit Integration," *AJ*, 2022. DOI: 10.3847/1538-3881/ac9900.

6. **Behzad Tahmasebzadeh**, L. Zhu, J. Shen, O. Gerhard, and Y. Qin, "Deprojection of external barred galaxies from photometry," *MNRAS*, 2021. DOI: 10.1093/mnras/stab3002.

7. **Behzad Tahmasebzadeh** and K. Karami, "Generalized Brans-Dicke inflation with a quartic potential," *Nuclear Physics B*, 2017. DOI: 10.1016/j.nuclphysb.2017.02.018.

8. **Behzad Tahmasebzadeh**, K. Rezazadeh, and K. Karami, "Brans-Dicke inflation in light of the Planck 2015 data," *JCAP*, 2016. DOI: 10.1088/1475-7516/2016/07/006.