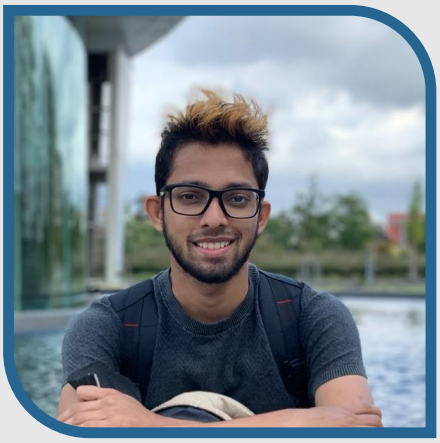

Pavan Vynatheya

PhD student/researcher,
MPA Garching

MPA, Garching, Germany

https://wwwmpa.mpa-garching.mpg.de/ pavanvyn/

pavan.vynatheya@gmail.com

Indian

English, Kannada, Tamil, Hindi

About Me

I completed my BS-MS dual degree in Physics major (with a minor in Mathematics) at IISER Kolkata, India. I started my PhD in Multiple Star Evolution group at Max-Planck-Institut für Astrophysik, Garching, Germany in September 2020.

Technical Skills

- Programming languages
  - Python (plus multiple packages)
  - MATLAB
  - Working knowledge of C, C++, IDL
- Web development
  - Proficient in HTML, CSS, Javascript
  - Basics of PHP, MySQL
- Astronomy software
  - IRAF DAOPHOT (photometry)
  - SAO DS9 (imaging)
  - HEASOFT XSPEC (spectral fitting)

Research Experience

Oct, 2021 – present	**MPA, Garching, Germany** Stability of quadruple systems *(ongoing) (PhD project)*	Dr. Adrian Hamers
Sep, 2020 – Oct 2021	**MPA, Garching, Germany** Compact object mergers in quadruple-star systems *(PhD project)*	Dr. Adrian Hamers
Aug, 2019 – May, 2020	**IUCAA Pune, India** Multiple pattern speeds in barred galaxies *(Master thesis)*	Prof. Kanak Saha
May – Aug, 2019	**Western Univesity, London, Canada** Comparison of real and simulated galaxies using Deep Learning *(Summer internship)*	Prof. Pauline Barmby
May – Jul, 2018	**INAF OAB, Merate, Italy** Study of low frequency Quasi-Periodic Oscillations in accreting black hole binaries *(Summer internship)*	Prof. Tomaso Belloni
May – Jul, 2017	**ARIES Nainital, India** Identification of Young Stellar Objects using Spitzer archive data *(Summer internship)*	Dr. Saurabh Sharma
Jun – Jul, 2016	**IIAP, Bangalore, India** Verification of star clusters using Colour-Magnitude Diagrams *(Summer internship)*	Prof. Annapurni Subramaniam

Education

2020 – present	**Max-Planck-Institut für Astrophysik, Garching, Germany (IMPRS Munich program)** PhD in computational stellar dynamics and evolution
2015 – 2020	**Indian Institute of Science Education and Research (IISER) Kolkata, India** BS-MS Physics major + Mathematics minor Final CGPA **9.19** (in a scale of 0-10)
2013 – 2015	**KLE Independent PUC, Bangalore, India** Classes 11-12
2003 – 2013	**Sri Vani Public School, Bangalore, India** Classes 1-10

Publications

1. *(Submitted to ApJ)* **Vynatheya, P.**; Hamers, A. S.: *How important is secular evolution for black hole and neutron star mergers in 2+2 and 3+1 quadruple-star systems?*. 2021, arXiv:2110.14680
2. *(Submitted to MNRAS)* **Vynatheya, P.**; Saha, K.; Ghosh, S.: *Multiple pattern speeds in a long peanut-shaped bar in a simulated galaxy*. 2021, arXiv:2105.03183
3. Hamers, A. S.; Rantala, A.; Neunteufel, P.; Preece, H.; **Vynatheya, P.**: *Multiple Stellar Evolution: a population synthesis algorithm to model the stellar, binary, and dynamical evolution of multiple-star systems*. 2021, MNRAS, 502, 4479
4. Bogensberger, D.; Ponti, G.; Jin, C.; Belloni, T. M.; Pan, H.; Nandra, K.; Russell, T. D.; Miller-Jones, J. C. A.; Muñoz-Darias, T.; **Vynatheya, P.**; Vincentelli, F.: *An underlying clock in the extreme flip-flop state transitions of the black hole transient Swift J1658.2-4242*. 2020, A&A, 641, A101

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MPA Garching

Soft Skills

- Teamwork
  - Part of IISER Kolkata fest core committee 2016 – 2017
  - Part of IISER Kolkata event organisations 2015 – 2016
- Leadership
  - Head of IISER Kolkata music club 2016 – 2017
  - Head of IISER Kolkata fest web design team 2016 – 2017
- Communication
  - Part of a paper presentation club to improve vocational skills

Academic scholarships

May – Aug, 2019	**Mitacs Globalink** Summer Research fellowship at Western University, London, Canada
May – July, 2017	**Indian Academy of Sciences** Summer research fellowship at ARIES Nainital, India
2015 – 2020	**DST INSPIRE** Five-year BS-MS fellowship at IISER Kolkata, India

Conferences and schools

Jan, 2022	**Dynamical Formation of Gravitational Wave Sources** Aspen Center for Physics, Aspen, United States
Aug, 2021	**Summer School on Gravitational Wave Astrophysics** NBIA, Copenhagen, Denmark
Mar, 2021	**TRiple EvolutioN and DYnamics 3** Northwestern University, Evanston, United State (held online)
Jun, 2019	**CASCA (Canadian Astronomical Society) meet** McGill University, Montreal, Canada
Dec, 2018	**IIST Astronomy and Astrophysics School** IIST, Thiruvananthapuram, India
Feb, 2017	**Telescope making workshop** IISER Kolkata, India
Dec, 2015	**Vijyoshi Science Camp** IISER Kolkata, India (and IISc, Bangalore, India)

Relevant coursework

Basic (Phy)	Condensed matter physics, Astrophysics, Computational physics
Intermediate (Phy)	Electromagnetism, Quantum field theory, High energy physics, Waves and optics
Advanced (Phy)	Classical mechanics, Quantum mechanics, General relativity, Statistical mechanics, Mathematical methods
Basic (Math)	Linear algebra, Real analysis, Graph theory, Probability and statistics
Advanced (Math)	Algebra, Differential geometry, Algebraic topology

December 21, 2021 Pavan Vynatheya