Ambica Govind

Contact Information

Department of Physics and Astronomy
University of Utah
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Research Interests

Observational Cosmology, Astrophysics of Galaxies and Clusters;
Survey Science, Analytical Modelling and Hydrodynamical Simulations

Education

University of Utah, Salt Lake City, UT
PhD Physics, May 2025- May 2030(expected)

Indian Institute of Technology Hyderabad, Hyderabad, India
B.Tech. Engineering Physics
GPA: 3.92/4.00, Degree: 2 of 29

Honors and Awards

Saroj Sharma Memorial Award for Excellence in Research, 2024
Institute Award for Excellence in Research, 2024
Institute Academic Excellence Award, 2023
Caltech Summer Undergraduate Research Fellowship, 2023
DAAD-WISE German Academic Exchange Scholarship, 2023
Australian National University Future Research Talent Award, 2023
IASc-INSA-NASI Summer Research Fellowship, 2023
Kishore Vaigyanik Protsahan Yojana Fellowship (Indian Institute of Science), 2023

Research Experience

During Undergraduate Studies

- Hunting Kilonovae using DESI and Wendelstein
  (Advisor: Prof. Daniel Gruen, LMU Munich)
- Rotation Curve Modelling to constrain dark matter profiles in disk galaxies
  (Advisor: Prof. Paolo Salucci, SISSA Trieste)
- Testing MOND and Entropic Gravity on a Galaxy Cluster
  (Advisor: Prof. Shantanu Desai, IIT Hyderabad)
- Disk Galaxies in IllustrisTNG: the Star-Forming Main Sequence, Size-Mass Relation and Baryonic Tully-Fisher Relation
  (Advisor: Dr. Gauri Sharma, Astronomical Observatory of Strasbourg)

Workshops

- Michigan Cosmology Summer School 2025
  Attended lectures on gravitational wave cosmology, inflation, structure formation and numerical/statistical tools.

Teaching and Mentorship

At IIT Hyderabad

- Teaching Assistant for Electrodynamics EP3110
- Teaching Assistant for Data Science Analysis PH6130

Publications

A. Govind, S. Desai, *A test of MOND and emergent gravity with SMACS J0723.3-7327 using eROSITA observations*, Journal of Cosmology and Astroparticle Physics, 2024(10), 030. doi:10.1088/1475-7516/2024/10/030

Outreach

- The Matrix and its Elements: Observing the Cosmos, *Public Lecture*, Cepheid Symposium, Hyderabad(India).
- Dark Matter Debunked, *Public Lecture*, Cepheid Symposium, Hyderabad(India).
- Navigating Undergraduate Astronomy Research, *Public Lecture*, Cepheid Symposium, Hyderabad(India).

References

Prof. Shantanu Desai
Professor of Physics, IIT Hyderabad
shantanud@phy.iith.ac.in