

Urmila Chadayammuri



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Education

Yale University 2015 - Present

PhD Candidate, Astronomy

Thesis: Sub-Grid Modeling of Active Galactic Nuclei in Cosmological Simulations of Galaxy Clusters

Supervisor: Prof. Daisuke Nagai

Brown University 2009-2013

Bachelor of Science, Physics

Thesis: Detection of Dwarf Spheroidal Satellites of the Milky Way in the Sloan Digital Sky Survey

Supervisor: Prof. Savvas Koushiappas

Research Experience

Building a sub-grid model for AGN feedback in cosmological simulations of clusters Sep 2016 - Present

- Supervisor: Prof. Daisuke Nagai (Yale U.)
- Building a sub-grid model for the impact of Active Galactic Nuclei on the large scale gas properties of clusters of galaxies in cosmological simulations
- Simulation written in C, analysis and visualization in Python

Dark matter substructure in the Hubble Frontier Fields and the Illustris Simulation Sep 2014-Jun 2016

- Supervisors: Prof. Priya Natarajan (Yale U.) and Prof. Lars Hernquist (Harvard U.)
- Compared dark matter substructure in clusters of galaxies computed in the Illustris simulation to those measured using gravitational lensing by clusters observed in the Hubble Frontier Fields mission
- Accepted to MNRAS, Dec 2016.

Dwarf galaxy candidates in the Sloan Digital Sky Survey 2012- 2013

- Supervisor: Prof. Savvas Koushiappas (Brown U.)
- Automated photometric screening of ~ 100 million stars in NASA's Sloan Digital Sky Survey to detect potential dwarf galaxy satellites of the Milky Way

Teaching Experience

Teaching Assistant - Yale University Jan 2016-present

- Fall 2017: Galaxies in the Universe
- Fall 2016: Research Methods in Astrophysics
- Spring 2016: Galaxies in the Universe

Yale Young Global Scholars - Lead Instructor Jun 2016-Jul 2017

- Instructed programs in Applied Science and Engineering and Technology, Innovation and Entrepreneurship
- Designed and taught 6 seminars per session
- Led 9 groups of 4-5 high school students in a two-week, undergraduate-level research project



Brown University

2010- 2012

- Grader: Introduction to General Relativity, Spring 2013
- Peer Tutor: Introduction to Mechanics, Introduction to Electricity and Magnetism and Calculus I and II

Other Work Experience

Junior Analyst - McKinsey Investment Office (New York)

2013 - 2014

- Fixed Income and Global Equity portfolios

Publications and Presentations

Jun 2017. "Mapping substructure in the HST Frontier Fields cluster lenses and in cosmological simulations." Natarajan, P., Chadayammuri, U., et al. MNRAS, Volume 468, Issue 2, p.1962-1980.

Nov 14, 2017. "Probing Dark Matter and Dark Energy with Galaxy Clusters". SuperComputing 2017, Denver, CO. Invited talk for the Lenovo Student Challenge.

Sep 29, 2017. "Simulating Galaxy Clusters with Realistic AGN: A Multi-Scale Problem". NY Area Computational Hydrodynamics Meeting, Center for Computational Astrophysics, New York, NY.

Jun 11, 2017. "OmegaAGN - Towards a parameter-free model of AGN in cosmological simulations of galaxy clusters". Poster presentation. Women in Astronomy IV, Austin, TX. Sponsored by AAS travel grant.

Nov 12-14, 2014. Yale Frontier Fields Workshop. Yale University, New Haven, CT. Poster presentation. Testing Lensing Scaling Relations with the Illustris Simulation.

Aug 2, 2012. Summer Research Symposium. Brown University, Providence, RI. Poster presentation. Huge Databases and Minuscule Particles: Setting limits on WIMP masses through analysis of data from Fermi and Sloan catalogs.

Fellowships and Awards

2017 Henry A. Smith Fellowship in Astronomy, Yale University

2016 Bunker Fellow, Graduate School of Arts and Sciences, Yale University

2013 Smiley Award for Excellence in Astronomy, Office of the Dean, Brown University

2012 Undergraduate Teaching and Research Assistantship, Brown University

Supported by NASA Rhode Island Space Grant

2011 Brown International Scholars Program Fellow

2009 Davis United World Scholars Program

Harrison Family Scholarship

Languages

Computer: Python, C

Human: English, Russian, Hindi, Malayalam, German, French