

# SIDDHANT MANNA

PhD Scholar | IIT Hyderabad, India.

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## EDUCATION

- Ph.D. in Astrophysics**, Indian Institute of Technology (IIT) Hyderabad , GPA: 9.69/10.00 2027 (expected)  
Principal Investigator: Prof. Shantanu Desai.  
Committee: Shantanu Desai (Chair), Narendra Sahu, Kirit Makwana.
- M.Sc. in Applied Physics**, NIT Silchar , GPA: 9.83/10.00 May, 2021
- B.Sc. in Physics & Astronomy** , University of Lucknow, GPA: 7.40/10.00 June, 2019

## RESEARCH EXPERIENCE

- Senior Research Fellow** July, 2024 - present  
**Shantanu Desai (SD) Group**, Astrophysics & Cosmology, IIT Hyderabad  
Hyderabad, India
- Stacking of clusters to search for gamma-ray emission (ongoing).
- Junior Research Fellow** July, 2022 - July 2024  
**SD Group**, Astrophysics & Cosmology, IIT Hyderabad
- Search for High Energy gamma-ray emission from galaxy clusters in MeV-GeV ranges using Fermi and Comptel data.
  - Indirect search for dark matter using gamma rays.

## PEER-REVIEWED PUBLICATIONS

- S.Manna & S.Desai, Search for GeV Gamma-Ray Emission from SPT-SZ selected Galaxy Clusters with 15 years of Fermi-LAT data**, Journal of Cosmology and Astroparticle Physics, vol. 2024, no. 1, IOP, 2024. [\[arXiv\]](#) [\[JCAP\]](#)
- S.Manna & S.Desai, A pilot search for MeV gamma-ray emission from five galaxy clusters using archival COMPTTEL data**, Journal of Cosmology and Astroparticle Physics, vol. 2024, no. 5, IOP, 2024. [\[arXiv\]](#) [\[JCAP\]](#). Data available at [\[Github\]](#)
- S.Manna & S.Desai, Search for Dark Matter Annihilation to gamma-rays from the SPT-SZ selected Galaxy Clusters** (forthcoming). [\[arXiv\]](#)
- N.Shrivastava, S.Manna & S.Desai, Search for MeV Gamma-ray emission from TeV bright red dwarfs with COMPTTEL** (forthcoming). [\[arXiv\]](#)
- S.Manna & S.Desai, A test for the redshift dependence of  $\sigma_8$  using  $\sigma_8$  measurements**, Eur. Phys. J. C 84, 661 (2024). [\[arXiv\]](#) [\[EPJ C\]](#)

## PEER-REVIEWED CONFERENCE PRESENTATIONS

- S.Manna & S.Desai, August 2024. Search for GeV Gamma-Ray Emission from SPT-SZ selected Galaxy Clusters with 15 years of Fermi-LAT data** . Poster to be presented virtually at the **32nd International Astronomical Union (IAU) General Assembly (GA) 2024**, Cape Town, South Africa. [\[Poster\]](#)
- S.Manna & S.Desai, June 2024. Search for GeV Gamma-Ray Emission from SPT-SZ selected Galaxy Clusters with 15 years of Fermi-LAT data**. Contributed Talk at **The Summer School on Cosmology, Abdus Salam International Centre for Theoretical Physics**, Trieste, Italy. [\[Talk\]](#)
- S.Manna & S.Desai, Feb 2024. Poster presented virtually at the Young Astronomers' Meet (YAM), CHRIST (Deemed to be University)**, Bangalore, India.

4. **S.Manna & S.Desai**, Feb 2024. Search for GeV Gamma-Ray Emission from SPT-SZ selected Galaxy Clusters with 15 years of Fermi-LAT data . Poster presented at the **42nd meeting of the Astronomical Society of India (ASI) hosted jointly by IISc, ISRO & JNP**, Bangalore, India. [Poster]

## WORKSHOPS & SCHOOLS

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1. **S.Manna**, June 2023. Virtually Attended the **Michigan Cosmology Summer School** conducted by University of Michigan, US. It covered Hands on coding session on Halo Occupation Modelling.
2. **S.Manna**, May 2023. Attended the school on **Largest Cosmological Surveys and Big Data Science** at ICTS, Bangalore, India. Gave a group presentation on Extracting Cosmological information from LSS signal: BAO & RSD. PI: Dr. Héctor Gil-Marín.
3. **S.Manna**, July 2021. Virtually Attended the **International Summer School on the ISM of Galaxies, from the Epoch of Reionization to the Milky Way** conducted by Centre national de la recherche scientifique, Paris, France.

## HONORS AND FELLOWSHIPS

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2024	<b>Senior Research Fellowship</b> , IIT	Hyderabad, India
2024	<b>Honourable Mention for Best Poster at Research Scholars Day</b> , IIT	Hyderabad, India
2022	<b>Junior Research Fellowship</b> , IIT	Hyderabad, India
2022	<b>Qualified Graduate Aptitude Test in Engineering (GATE) for PhD Admission</b> , All India Rank 404	
2019	<b>Received Institute Silver Medal for highest GPA in MSc Physics</b> , NIT	Silchar, India
2019	<b>Qualified IIT Joint Admission Test for Masters</b>	

## TEACHING EXPERIENCE

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### IIT Hyderabad

Teaching Assistant	July, 2024 - Present
• <i>Preparatory course on Physics for physically handicapped students</i>	
Teaching Assistant	Jan, 2024 - May, 2024
• <i>Graded assignments for course on Data Science Analysis, 150 students</i>	
Teaching Assistant	July, 2023 - Dec, 2023
• <i>PH-5600 Quantum Mechanics for Engineers</i>	
Teaching Assistant	Jan, 2023 - May, 2023
• <i>B.tech Physics Lab</i>	

## SKILLS

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**Programming Languages** Python, Java, C++  
**Tools**  $\LaTeX$ , SAOImage DS9, HEASoft, CLUMPY, TOPCAT  
**Statistical analysis** R, MATLAB