UNIVERSITÀ DEGLI STUDI DI PADOVA

INAF
ISTITUTO NAZIONALE DI ASTROFISICA

INTRODUCTION AMBRESH MAHANARAYAN MISHRA

"DEVELOPMENT OF TECHNOLOGIES FOR OBSERVING METEORS FROM THE GROUND AND SPACE"

Education:-

- **Bachelor of Science in Physics (2016-2019)**
  Dr. SDD College Wada, Mumbai University,
  CGPI: 6.50/10

- **Master of Science in Physics (SSE) (2019-2021)**
  The Institute of Science, Dr. Homi Bhabha State University
  Thesis:- Theoretical Review Of electronic and optical properties of MoSe2 and WSe2
  CGPI: 9.29/10

Work Experience:-

- **Assistant Professor** (Sep 2022 – April 2024)
  Government Polytechnic, Vikramgad

- **Adjunct Professor** (Jan 2023 - Mar 2023)
  The Institute of Science, Dr. Homi Bhabha State University

- **Assistant Teacher** (April 2022 – Aug 2023)
  Rajmangal Singh Jr. College.

Publication:-

Relativistic theory to Compton effect for spectroscopic detector
(Nuclear Instruments and Methods in Physics Research Section A: https://doi.org/10.1016/j.nima.2022.166656)

UNIVERSITÀ DEGLI STUDI DI PADOVA

INAF ISTITUTO NAZIONALE DI ASTROFISICA

Current position within the PhD Program of National Interest in Technologies for fundamental research in Physics and Astrophysics:

Curriculum: Computing and Information technology
Topic: Development of technologies for observing meteors from the ground and space
Hosting research center: INAF - Osservatorio Astrofisico di Torino
Supervisor: Daniele Gardiol, Dario Barghini

PhD Project Overview

Objectives:-

- Identify meteor signals in seismic and infrasound data
- Develop an Integrated Alert System (IAS) for real-time data collection.
- Create a comprehensive data model for analysis.
- Integrate and maintain the PRISMA optical network.
- Investigate requirements for spectroscopic cameras.
- Integrate space-based data into the observational framework.

Expected Outcomes:

- A validated methodology for meteor signal identification.
- An operational IAS for coordinated observations.
- A robust data model for advanced fireball analysis.
- Enhanced capabilities for integrating space-based meteor data.

- **Impact of Research**:
  - Advancing our understanding of meteors and improving hazard assessments for NEOs.
  - Contributing to meteor science and laying the groundwork for future multi-messenger observation initiatives.