Contribution ID : **29** Type : **not specified**

Synergistic Science with Rubin and MeerKAT

Tuesday, 20 October 2026 11:55 (20)

Panchromatic data, by combining observations across multiple wavelengths, offer an unparalleled, comprehensive view of galaxies. This enables the determination of key physical properties and leads to discoveries not possible with single-wavelength data alone. While Rubin is preparing to make enormous discoveries in the optical wavebands, the MeerKAT radio telescope in South Africa is providing wide-field radio continuum imaging of the same sky observed by Rubin. These radio continuum observations are crucial as they provide dust extinction-free star formation rates (SFR) of galaxies, as well as the properties of Active Galactic Nuclei (AGN). In this talk, I will present a semi-automated pipeline, developed as a part of the South African in-kind contribution towards the LSST Galaxy Science Collaboration. This pipeline is designed for MeerKAT data reduction, source extraction and cross-matching them with the optical data from Rubin and hence creating a powerful synergistic dataset. The resulting multi-wavelength catalog will be highly beneficial for diverse science cases, including accurate SFR estimation, precise source counts, and detailed radio source clustering analyses. I will also present preliminary results using existing sources extracted from MeerKAT images, cross-matched with the DECaLS optical survey, demonstrating the immediate utility of this approach.

Presenter(s) : Dr SURESHKUMAR, Unnikrishnan (NCBJ)

Session Classification : Session 6