Contribution ID: **25**   Type: **Poster presentation (90 second oral summary, 90 minute poster session & free presentation times over 3x 40m coffee breaks)**

Instrument Signature Removal and Calibration Products for the Rubin LSST

Tuesday 12 March 2024 14:30 (1h 30m)

The Vera C. Rubin Observatory, currently under construction in Cerro Pachón, Chile, will conduct the Legacy Survey of Space and Time (LSST) using the 3.2-gigapixel LSST Camera (LSSTCam) mounted on the 8.4-meter Simonyi Survey Telescope. The LSST aims to probe the nature of dark energy and dark matter, inventory the solar system, explore the transient optical sky, and study the evolution and structure of the Milky Way by surveying 18,000 square degrees of the southern sky more than 825 times over 10 years across six photometric bands: ugrizy.

However, the precision required to achieve these ambitious goals is challenged by systematic errors that could dominate the results from the LSST. Instrument Signature Removal (ISR)—the process of correcting for systematic errors and biases introduced by the instrument itself during the observation process—is therefore of paramount importance. ISR is essential for removing these instrument-induced effects from the raw data, thereby producing a more accurate representation of the observed astronomical objects or fields.

This poster provides a comprehensive overview of the current steps, order, and algorithms used in ISR for the LSST, and outlines improvement plans. It delves into the necessary calibrations and the specific algorithms and corrections required to mitigate systematic errors and enhance precision. The poster also highlights ongoing efforts to optimize these processes, with the ultimate goal of maximizing the LSST's scientific output and ensuring the successful

contribution subject matter

CCD sensors

Keywords for your contribution subject matter (this will assist SOC in accurately characterizing your contribution)

CCDs

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Session Classification: Poster Session

Track Classification: Major ISPA Workshop Tracks: Software/Algorithms for Precision Astronomy