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Low Surface Brightness galaxies in the early Rubin data

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The standard pipeline and deblender for LSST use techniques that are not ideal to the characterization of Low Surface Brightness galaxies and features. Of particular concern and interest to us, are issues of shredding and improper centroiding for LSB galaxies which leads to the standard pipeline catalogs becoming unreliable when searching for these objects. The alternative of re-doing the photometry across the LSST data release footprints in order to make them more LSB-friendly, would be an extremely resource-intensive task which may not be accessible at present to the community. Which also makes it time and labour intensive to obtain an appropriate training set that can be used to calibrate machine learning techniques for LSB science. Through a combined use of additional operations on the LSST catalog products and the deployment of transfer learning techniques, we are working to post-process the standard catalogs from Data Preview 1 and 2 to identify and detect LSB galaxy candidates. This would be an accessible alternative for most users of the Rubin Science Platform and would allow us to start building a statistical sample of LSB galaxies in the LSST footprint. If possible, I look forward to presenting my work which focuses on searching for and identifying LSB galaxies in the early data releases of Rubin (Data Preview 1 and 2).

Presenter(s) : Dr HAZRA, Nandini (NCBJ Warsaw)

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