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Is the statistical analysis of Ultra Diffuse Galaxy possible with LSST?

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Low surface brightness galaxies (LSBs) are estimated to make up around 50% of the total number density of galaxies in the local observable universe. However, they contribute less than 10% of the total luminosity, making them challenging to detect. LSBGs are defined as having an average surface brightness greater than 23 mag/sec2 in the r-band. An even more extreme subtype of LSBGs are Ultra Diffuse Galaxies (UDGs) - a subtype of LSBGs that are even fainter and larger. Will LSST provide the opportunity and tools for new statistical analyses of these extremely shy objects? What kind of pipeline do we need to develop to analyze the first examples of LSBGs and UDGs? In my talk, I will present the proof of concept for our analysis, starting with classification through flux measurements, spectral energy distribution fitting and environmental studies and addressing the need for spectroscopic follow-up.

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