

Abstract Submitted
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Image Processing for Galaxy Ellipticity Analysis¹ PAUL STANKUS, Oak Ridge National Lab — Shape analysis of statistically large samples of galaxy images can be used to reveal the imprint of weak gravitational lensing by dark matter distributions. As new, large-scale surveys expand the potential catalog, galaxy shape analysis suffers the (coupled) problems of high noise and uncertainty in the prior morphology. We investigate a new image processing technique to help mitigate these problems, in which repeated auto-correlations and auto-convolutions are employed to push the true shape toward a universal (Gaussian) attractor while relatively suppressing uncorrelated pixel noise. The goal is reliable reconstruction of original image moments, independent of image shape. First test evaluations of the technique on small control samples will be presented, and future applicability discussed.

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