ID de Contribution: **1** Type: **Non spécifié**

Development of a cosmic shear estimator based on galaxy images second moments

vendredi 15 décembre 2023 11:00 (20 minutes)

Shear estimation began in 1995 with the KSB proposal, which essentially consists of using a combination of the second moments of the observed image of the galaxy and the PSF. Numerous other methods have been proposed over the years, and in most cases, the measurements derived from these methods have to be corrected using simulations, and therefore depend on the assumptions of these simulations, particularly concerning galaxy and PSF profiles. Whether these methods measure shapes by maximum likelihood, or by a more or less complex combination of second moments, the corrections to be applied depend on the details of galaxy and PSF shapes.
Although we use simulations, we are trying here to develop an approach that is independent of the galaxy profile and PSF, since the way the estimator depends on them is measured on the images themselves.

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Classification de Session: Science talks