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Weak lensing cluster masses and mass-richness relation in DESC DC2 simulations

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Constraining the mass-observable relations is a key ingredient for cluster cosmology. In particular, for optical surveys such as the Rubin LSST, the cluster abundance relies on the determination of the mass-richness relation. In that context, weak gravitational lensing by galaxy clusters can be used as a powerful tool to estimate cluster masses. We use the cluster-galaxy weak lensing in the simulated galaxy catalogs of the Data Challenge 2 (DC2) of the Dark Energy Science Collaboration to estimate the weak lensing mass-richness relation for RedMapper-detected DC2 galaxy clusters. In this presentation, we focus more particularly on how modelling choices of the weak lensing signal and photometric redshifts may impact the mass estimation.

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