Contribution ID: **480** Type: **Poster**

Weak Lensing Analysis of the SPIDERS Clusters

Tuesday 22 May 2018 15:00 (1 hour)

Galaxy clusters are the most massive gravitationally bound systems in the universe. Direct observations and theoretical studies of galaxy clusters reveal important information of large-scale structures. In this study, we use the weak gravitational lensing's analytical technique to investigate the mass distribution in galaxy clusters. We report our preliminary results on the analysis of the SPectroscopic IDentification of ERosita Sources (SPIDERS) clusters, in the redshift range 0.05 −0.6. We use imaging data obtained from the Dark Energy Camera Legacy Survey (DECaLS) to fit the excess mass density with the Navarro–Frenk–White (NFW) profile. We have stacked the cluster mass profile using the optical richness to measure their average density profiles in each bin to constraint the scaling relation.

Keywords: weak gravitational lensing : galaxy cluster

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Session Classification: A07: Astronomy I (Poster)

Track Classification: Astronomy, Astrophysics, and Cosmology