

The study of scaling relations of massive galaxy clusters using weak gravitonal lensing technique

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Weak gravitational lensing of galaxy cluster provides a direct method to probe their mass distribution. We report our preliminary results on the analysis of a complete sample of ~ 50 massive galaxy clusters, in the redshift range 0.1 - 0.6, in the Canada France Hawaii Telescope Legacy Survey (CFHT-LS), drawn from the large sample built by Covone et al. (2014). For each galaxy cluster, we determined the mass distribution from the radial shear profile, the mass-to-light ratio and the optical richness, in order to study how the galaxy population in clusters trace mass as a function of scale. We have studied the scaling relation of mass with optical luminosity and richness for massive clusters. Moreover, by assuming that the average mass-to-light of galaxy clusters is very close to the cosmological values, we can determined the mass density of the universe.

Keywords: weak gravitational lensing : galaxy cluster

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