

Dust extinction and magnification by galaxy clusters

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In addition to weak lensing shear, information on the mass profiles of galaxy clusters may be inferred from the magnification of galaxies along the line of sight. However such analysis may also be sensitive to the presence of intra-cluster dust, which will act to reduce the magnitude of galaxies. These effects may be differentiated by the chromatic effects of dust extinction and the different redshift dependence of these two effects. It is important that such effects are understood in order to fully exploit the weak lensing magnification information for future Rubin magnification measurements. Furthermore such measurements may provide interesting results on the composition of the intra-cluster medium and the cosmic dust density. We investigate the impact of dust using HSC weak lensing data and the Redmapper SDSS galaxy cluster catalogue.

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