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Cluster Arc Statistic SHIRLEY CHAN WAN HO, Princeton University/ UC Berkeley, MARTIN WHITE, UC Berkeley — We study the strong gravitational lensing properties of galaxy clusters obtained from N-body simulations with standard ΛCDM cosmology. We have used the 32 most massive clusters from a simulation at various redshifts and ray-traced through the clusters to investigate the giant arcs statistics. We have investigated the prevalence of multiple arc system, by looking at the multiple arc fraction (defined in the paper) systematically in various clusters and we have found that $\sim 40 - 50\%$ of the clusters that produce giant arcs give multiple arcs, which agrees with the RCSII observations. We have also investigated the mass distributions that are efficient in lensing, discussed effects of source sizes and various other factors that are very important in the formation of giant arcs.

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