

# Dark matter properties in galaxy clusters through gravitational lensing.

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In this talk I will discuss several studies of galaxy clusters that uses weak gravitational lensing and other techniques. In particular we will discuss (i) the physics of merging clusters from three examples (A1758, A3376 e A2034), (ii) the evolution of the dark matter density profile up to intermediate redshifts ( $z > 0.5$ ) and (iii) on the formation times of galaxy systems dominated by its central galaxies (e.g. fossil groups) as indicated by its dark matter concentration.