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The dark-matter halos of massive lens galaxies and clusters of galaxies

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The physics of gravitational light deflection, or gravitational lensing, offers a great variety of applications in several fields of astrophysics. In particular, in the strong lensing regime, the observations of multiple images of background sources created by intervening mass concentrations provide the opportunity of measuring very precisely the total mass of the lenses. The combination of strong gravitational lensing and stellar population models has turned out to be an invaluable tool to disentangle the luminous and dark-matter components in the inner regions of distant galaxies and clusters of galaxies. I will show how, by using this technique on unprecedented data obtained with the Hubble Space Telescope and Very Large Telescope, we have been able to investigate the properties of the dark-matter halos of massive lens early-type galaxies and galaxy clusters in the CASSOWARY and CLASH surveys.

Presenter: GRILLO, Claudio