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Sesión Científica: Galaxias y Cosmología

Título: Estimating the size and abundance of dark matter subhaloes with gravitational millilensing

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Resumen:

We use 13 gravitational lens systems with quadruply imaged QSOs and their observed flux ratio anomalies obtained using data in mid-infrared, radio or spectral narrow lines as a baseline, to estimate the amount of substructure in the dark matter halo of lens galaxies. We assume that the smooth gravitational potential of the galaxies is well modeled by a Singular Isothermal Ellipsoid (SIE) plus external shear (γ) along with an additional Singular Isothermal Sphere (SIS) in some cases, and that the cause of the flux ratio anomalies is dark matter subhalos described by pseudo-Jaffe density profiles. Our Bayesian estimates for the Einstein radius of the subhalos (as a fraction of the Einstein radius of their corresponding lens galaxy) is $b = 0.0009 -0.0007 +0.0031$, and their abundance (as a fraction of the total surface density of the lens galaxy at the image positions) is $\alpha = 0.12 -0.05 +0.08$.