

The challenging quest for dark matter substructure

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Measuring the abundance of dark matter substructures in distant galaxies is a key constraint on the nature of dark matter. Unfortunately, most of these small mass substructures are expected to be completely dark and therefore not directly observable. Strong gravitational lensing provides a unique opportunity to detect and quantify the smallest and faintest substructures at cosmological distances. Thanks to the combination of state-of-the-art lens modelling tools and high angular resolution data, we are now able to probe the substructure mass function at a new low mass limit, where competing dark matter models differ by more than two orders of magnitudes. In this talk I will present the latest results and future perspective of substructure lensing.