The cold dark matter (CDM) paradigm predicts that a significant number of substructures, with a steeply rising mass function towards lower masses, populates the dark halo of galaxies. In the Milky Way, however, of order $10^5$ substructures are predicted inside the virial radius, whereas only a few have been so far observed. This poses a major challenge to the CDM paradigm. New and independent methods are, therefore, required to assess the level of mass substructure in galaxies in the Local Universe and beyond.

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.