

Using transients at extreme magnifications to constrain dark matter

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Events at cosmological distances, undergoing extreme magnifications have become a reality since the discovery of Icarus, the first strongly lensed star at redshift larger than 1. Since the discovery of Icarus, similar events have been observed in the last years, and many more are expected in the upcoming years. The large magnification factors present in these events allow to study not only the background source, but also the small-scale perturbations in the lens plane. This type of observations allow to constrain certain models of dark matter, like those postulating that primordial black holes with masses similar to those found by LIGO/Virgo can account for a fraction of the dark matter. In this talk I will review some of the possibilities offered by extreme magnified events to constrain the abundance of primordial black holes. In particular I will consider the case of extremely magnified stars, supernovae and gravitational waves.

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