



Contribution ID: 212

Type: **Invited/Solicited talk in mini-symposium**

Highly Magnified Extragalactic Stars

Thursday, 14 December 2023 16:15 (25 minutes)

Thanks to extreme gravitational lensing magnification factors realized near the lensing caustics cast by galaxy cluster lenses, the most massive and short-lived stars in the Universe can be individually observed at cosmological distances. In this talk, I will demystify the phenomenology of these highly magnified stars, in particular the effect of intracluster microlensing. Additionally, I will explain how observing those can advance our knowledge of massive stars, and how this phenomenon can be exploited as an exquisite probe of dark matter mini-structures on sub-galactic scales. I will summarize recent observational progress in this area of study, and provide a future outlook.

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Session Classification: Gravitational Lensing