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## **Anna Nierenberg (UCI): The nature of dark matter with narrow-line lensing**

*Thursday 22 February 2018 07:30 (20 minutes)*

Strong gravitational lensing provides a means of measuring the halo mass function into regimes below which baryons are reliable tracers of structure. In this low mass regime ( $M_{\text{vir}} < 10^9 M_{\text{sun}}$ ), the microscopic characteristics of dark matter affect the abundance of dark matter halos. Strong gravitational lensing has been limited by the small number of systems which can be used to detect dark matter substructure. I will discuss the narrow-line lensing technique, which enables a significant increase in the number of systems which can be used to measure the subhalo mass function, and will provide a stringent new constraint on the free-streaming length of dark matter with currently known lenses alone. I will also discuss the promising future for this method in the era of LSST, JWST and 30 meter class telescopes.

**Presenter:** Dr NIERENBERG, Anna (UCI)

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