Contribution ID: **146** Type: **Invited/Solicited talk in mini-symposium**

The smallest dark structures

Thursday, 14 December 2023 16:10 (20 minutes)

Dark matter halos host galaxies, but cold dark matter is expected to cluster on much smaller scales as well. Small-scale dark matter structures would host no visible matter but can still leave hints about the nature of dark matter. If the dark matter is a thermal relic, the smallest structures are rho ˜ rˆ-1.5 density cusps that arose at the onset of structure formation in the universe. For WIMP models, these cusps may be Earth-mass, and their great abundance and high internal density lead them to dominate the annihilation rate at the present time. Gravitational signatures of small-scale dark structures are more difficult to access, but gravitational detection is possible for minihalos arising in scenarios with amplified small-scale density perturbations.

Primary author: DELOS, M. Sten (Carnegie Observatories)

Presenter: DELOS, M. Sten (Carnegie Observatories)

Session Classification: Dark Matter