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## **Halo substructure and implications for dark matter annihilation signals**

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A prediction of the standard  $\Lambda$ CDM cosmological model, also confirmed by N-body cosmological simulations, is that dark matter (DM) halos are teeming with numerous self-bound substructure, or subhalos. The precise properties of these subhalos represent important probes of the underlying cosmological model. Subhalos may also play a key role on the search for DM via its annihilation products, as they are expected to boost the DM signal of their host halos significantly (so-called subhalo boost). Previous work has traditionally assumed that subhalos exhibit similar structural properties than main halos, while subhalos are actually more concentrated. In this talk, I will present a refined substructure boost model that takes into account this effect as well as unavoidable tidal stripping effects on the subhalo population. Our work, which is entirely based on N-body simulation data at very different halo and subhalo mass scales, has important implications for current and future DM search strategies and results.

### **Presentation type**

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