

Shedding light on low-mass subhalo survival with numerical simulations

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In this work, we carry out a suite of specially-designed numerical simulations to shed further light on dark matter (DM) subhalo survival at mass scales relevant for gamma-ray DM searches, a topic subject to intense debate nowadays. Specifically, we have employed an improved version of DASH, a GPU N-body code, to study the evolution of low-mass subhalos inside a Milky Way-like halo with unprecedented accuracy. We have simulated subhalos with varying mass, concentration, and orbital properties, and considered the effect of the gravitational potential of the Milky-Way galaxy itself. In addition to shedding light on the survival of low-mass galactic subhalos, our results will provide detailed predictions that will aid current and future quests for the nature of DM.

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Dark matter

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