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(I) Mapping the dark matter in our Solar neighborhood

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The search for the invisible dark matter particle is complicated due to the uncertainties in its distribution in our Galaxy. An accurate determination of the dark matter phase space distribution in the Solar neighborhood is crucial for the correct analysis and interpretation of data from dark matter direct detection experiments. Massive satellites such as the Large Magellanic Cloud can impact the dark matter halo of the Milky Way, and boost the dark matter velocity distribution in the Solar neighborhood. I will present the local dark matter distribution of Milky Way-like galaxies extracted from state-of-the-art cosmological simulations, and discuss their implications for direct dark matter searches. I will also discuss how the dark matter component of the Large Magellanic Cloud can alter the results.

Keyword-1

Dark matter

Keyword-2

Cosmological simulations

Keyword-3

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