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The Large Magellanic Cloud and dark matter direct detection

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The Large Magellanic Cloud (LMC) can significantly impact the dark matter halo of the Milky Way, and boost the dark matter velocity distribution in the Solar neighborhood. Cosmological simulations that sample potential Milky Way formation histories are powerful tools, which can be used to characterize the signatures of the LMC's interaction with the Milky Way, and can provide crucial insight on the LMC's effect on the local dark matter distribution. I will discuss the impact of the LMC on the local dark matter distribution in state-of-the-art cosmological simulations, and its implications for dark matter direct detection.

Primary author: BOZORGNIA, Nassim (University of Alberta)

Presenter: BOZORGNIA, Nassim (University of Alberta)