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The effect of the LMC on non standard interactions for future dark matter direct detection experiments

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Previous studies have shown the effect of the Large Magellanic Cloud (LMC) on the local speed distribution of the dark matter particles. Since it dominates the high speed tail of the distribution and the gravitational interaction also boosts the solar neighbourhood dark matter particles to higher velocities, such an effect has an impact on direct detection searches. In this talk, I will discuss the impact of the LMC on the expected signals in different future direct detection experiments taking into account not only the standard spin-independent (dependent) signal but different dark matter - nucleon interaction types following the Non-Relativistic Effective Field Theory approach. Furthermore, I will discuss how the LMC affects the results in the case of inelastic dark matter.

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