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Enhancement of the relic neutrino density in the Milky Way

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Neutrino oscillations have shown that these weakly interacting particles have a mass different from zero, although cosmology points towards smaller values for their masses than previously expected. Despite the smallness of their mass, relic neutrinos coming from the time of their decoupling might cluster under strong gravitational potentials, such as the one of our galaxy, leading to an overdensity of such neutrinos in our surroundings. This can be helpful for future experiments' aiming at detecting relic neutrinos, like PTOLEMY. I will discuss an update on the gravitational clustering of relic neutrinos in the Milky Way, showing that the expected overdensity is unfortunately lower than desired.

Primary author(s) : Sr. FERNÁNDEZ DE SALAS, Pablo (IFIC)

Presenter(s) : Sr. FERNÁNDEZ DE SALAS, Pablo (IFIC)

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