

Searching for dark matter: from simulations to detection

Speaker:

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Date and time: Wednesday, 22nd of Farvardin (11h of April), 4:30 pm

Place: Farmanieh building

Abstract

One of the major sources of uncertainty in the interpretation of data from dark matter direct and indirect searches is due to the unknown astrophysical distribution of dark matter in the halo of our Galaxy. Realistic numerical simulations of galaxy formation including baryons have recently become possible, and provide important information on the properties of the dark matter halo. I will discuss the dark matter distribution of Milky Way-like galaxies obtained from high resolution cosmological simulations. To make reliable predictions for direct and indirect detection searches, we identify simulated galaxies which satisfy the Milky Way observational constraints. Using the dark matter distribution extracted from the selected Milky Way-like galaxies, I will present an analysis of current direct detection data, and discuss the implications for the dark matter interpretation of the Fermi GeV excess.

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