

# Dark Matter - Neutrino Scattering at the Galactic Center

*venerdì 21 giugno 2024 17:30 (2 ore)*

Evidence for the existence of dark matter strongly motivates the efforts to study its unknown properties. Additionally, the origin of high-energy astrophysical neutrinos detected by IceCube remains uncertain. Scotogenic models, in which neutrino mass generation occurs through interactions with the dark sector, are some of the leading theories that explain these two mysteries simultaneously. If dark matter and neutrinos couple to each other, we can search for a non-zero elastic scattering cross section. The interaction between an isotropic extragalactic neutrino flux and dark matter would be concentrated in the Galactic Center, where the dark matter column density is largest. The flux of high-energy neutrinos would be attenuated by this scattering, and the resulting signal, with correlated energy and arrival direction, can be observed in IceCube. Using the ten years of IceCube data, we perform a binned likelihood analysis, searching for several potential DM-neutrino interaction scenarios.

## Poster prize

Yes

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## Collaboration (if any)

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**Classifica Sessioni:** Poster session and reception 2

**Classificazione della track:** Beyond Standard Model searches in the neutrino sector