

Relevance of cross sections for indirect dark matter detection [20'+10']

Wednesday 16 October 2024 14:45 (30 minutes)

The origin of dark matter remains one of the most puzzling open problems in physics. Understanding its particle nature is a central focus of theoretical research and a primary objective for several experimental efforts. Among the various strategies for dark matter detection, indirect detection stands out as one of the most promising. This approach seeks to identify signals in flux data of the rarest cosmic particles (such as neutrinos, photons, or antimatter) originating from dark matter beyond the known astrophysical sources and mechanisms.

In this talk, I will review the current status of dark matter indirect detection, with a particular emphasis on the crucial role of cross-section measurements relevant for astroparticle physics. I will demonstrate how achieving the discovery potential for dark matter is contingent upon obtaining precise measurements of these cross sections.

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Session Classification: Introduction and motivation: astrophysics and dark matter