

Dark matter searches: status and prospects

Monday, 8 July 2024 09:30 (30 minutes)

Abstract: In the latest decades, the approaches towards investigating the nature of the dark matter component of the Universe have been marked by prejudices, mostly in connection to: A natural embedding of dark matter into an extension to the Standard Model of particle physics, possibly as a byproduct within models addressing some shortcoming of the Standard Model; A natural mechanism to produce dark matter in the early Universe, possibly in analogy to the other components defining the Standard Model of cosmology. Our faith in elegance and simplicity is fading away with results from accelerators searches and cosmological tensions. Conversely, a picture with a variegated, multi-component dark sector is becoming more plausible, breaking prejudices and opening new windows of opportunities.

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Session Classification: Plenary