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(I) Detecting Dark Matter

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Astronomical and cosmological observations strongly suggest that most of the matter in our Universe is non-luminous and made of an unknown substance called Dark Matter. But, currently, it remains invisible and undetectable directly on Earth and makes it one of the greatest mysteries in particle physics. Even if its direct detection escapes to the scientific community in our time, dark matter remains a fundamental concept that would explain how our Universe was formed and offer a unique chance to discover physics beyond the Standard Model.
Many worldwide experiments are actively searching for dark matter to understand its properties. After presenting how we can detect it directly, I will give an overview of cutting-edge technologies used by particle physicists focusing on the challenges we are currently facing and the need for innovative tools to improve the sensitivity of measurements at low energies.

Primary author: Prof. PIRO, Marie-Cécile (University of Alberta)

Presenter: Prof. PIRO, Marie-Cécile (University of Alberta)

Session Classification: M1-1 Dark Matter Experiments I (PPD) | Expériences sur la matière sombre I (PPD)

Track Classification: Technical Sessions / Sessions techniques: Particle Physics / Physique des particules (PPD)