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Dark Matter Physics in Neutrino Telescopes and Neutrino Physics in Dark Matter Detectors.

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It is often the case that experiments built with a focus on a specific fundamental question are also sensitive to a wider range of physical phenomena. In this talk I will discuss two such cases. First, I will follow JCAP 05 (2021) 054, which assesses what simple dark matter models will be uniquely probed by a Neutrino telescope similar to KM3NeT. Given the existing constraints from γ-ray telescopes, measurements of the cosmic microwave background and direct dark matter detection, we mention a secluded $U(1)_{L_\mu - L_\tau}$ model as particularly promising. Secondly, I will follow arXiv:2104.03297, which describes how detecting solar neutrinos in direct detection experiments will be vital for distinguishing between possible $U(1)$ explanations of the anomalous magnetic moment of the muon.

Reference to paper (DOI or arXiv)

10.1088/1475-7516/2021/05/054 and 2104.03297

Your gender (free text)

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