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Latest results from the NA64 experiment

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NA64 is a fixed target experiment at CERN searching for dark sectors in the scattering of electron, positron and muons on a target. In this talk, we report its latest results on sub-GeV Dark Matter searches with the 2016-2022 statistics (arXiv:2307.02404). With the new data, NA64 is starting to probe for the first time the very interesting region of parameter space motivated by benchmark light dark matter models. The experiment can also probe a variety of well-motivated New Physics scenarios that will be covered in this talk, such as ALPs, inelastic DM (Eur. Phys. J. C 83 (2023) no.5, 391), B-L (Phys. Rev. Lett. 129 (2022) no.16, 161801) and L_mu - L_tau Z' bosons searches (Phys. Rev. D 106 (2022) no.3, 032015). Moreover, we will present the preliminary results of NA64 running in positron and muon modes, and discuss the future prospects of the experiment including the use of hadron beams.

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