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Particle Physics at LPTHE

Mardi 14 Janvier 2025, 14 :00
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Domaines : hep-ph

Titre : *Two portals to GeV sterile neutrinos : dipole versus mixing*

Orateur : **Enrico Bertuzzo (University of Modena and Reggio Emila)**

Résumé : *Massive sterile neutrinos with masses around the GeV can have, in addition to the usual mixing with active neutrinos, also a dipole coupling with the photon that can be phenomenologically relevant. These sterile neutrinos can be long-lived and decay into a photon in a distant detector, via the dipole operator. In this talk I will study the interplay between these two portals at beam-dump facilities such as NA62 and SHiP, and at the FASER2 experiment, showing that all the experiments mentioned will be sensitive to values of the dipole which are presently unconstrained, even reaching new physics scales well above the electroweak one. Moreover, I will stress the specific correlations that arise between the experimental reach and the flavour of active neutrinos with which the steriles mix.*