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# Reinterpretation of CMS emerging jets for Higgs-mediated dark showers

*Friday 17 May 2024 10:15 (12 minutes)*

In this talk we will present the reinterpretation of the CMS emerging jets (that is, long-lived dark pions belonging to a strongly interacting dark sector), published in JHEP 01 (2024) 034 (arXiv:207.04847) and will show that particularly this search can set meaningful bounds on scenarios where the SM Higgs boson mediates between the visible and dark sectors. In particular we find that for dark pion lifetimes between 5-100 mm the reintepretation of this search, while suboptimal, would be more sensitive than the extrapolation of the BSM Higgs search (2.5 - 4 %, depending on the assumed systematics).

Hence, this talk combines:

a) dark showers, and in particular emerging jets, which is a LLP signature subset (and how to reinterpretate them)
b) s-channel mediators (the Higgs)
c) Higgs to invisible (or actually to “undetected”, as we do expect the dark pions to decay into the SM).

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