Contribution ID: 37 Type: not specified

Probing the minimal dark abelian gauge sector at the intensity frontier

Wednesday 30 November 2022 09:20 (20 minutes)

Dark photons originated from new hidden abelian symmetries are one of the best motivated extensions of the Standard Model. However, the simple

addition of a massive vector in the low energy theory might cause problems at high energies, meaning that there must be other new physics states charged under this new hidden symmetry. One way out is to directly UV complete the model by adding a dark Higgs mechanism. In this talk, I will present how the usual dark photon and dark Higgs phenomenology can be modified in this context by exploring meson decays at the KOTO, LHCb and BelleII experiments, and also by studying the impacts on the Higgs invisible width.

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