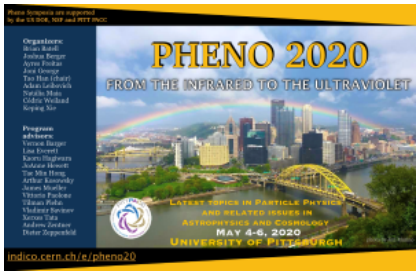

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Light Z′ and Dark Matter from U(1)_X Gauge Symmetry

Tuesday 5 May 2020 17:00 (15 minutes)

We consider a U(1)_X gauge symmetry extension of the Standard Model (SM) with a Z′-portal Majorana fermion dark matter that allows for a relatively light gauge boson Z′ with mass of 10 MeV– a few GeV and a much heavier dark matter through the freeze-in mechanism. In a second scenario the roles are reversed, and the dark matter mass, in the keV range or so, lies well below the Z′ mass, say, ~1 GeV. We outline the parameter space that can be explored for these two scenarios at the future Lifetime Frontier experiments including Belle-II, FASER, LDMX and SHiP.

Summary

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