

Phenomenology 2022 Symposium: From Virtual to Real



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Conformal Freeze-In and the Dark Photon

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We consider a scenario where the SM hypercharge field strength mixes with a rank-2 antisymmetric CFT operator. This mixing enables a freeze-in process in the early universe. At low-energies, the CFT confines; providing a dark sector described by dark “hadrons” which couples to the SM via a kinetically-mixed dark photon.

I will discuss why such a scenario is worth considering, the parameter space that produces the observed dark matter relic density, and the phenomenological constraints on such a model.

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