

Constraining light Shadow Z with low energy precision tests

A neutral vector boson, dubbed shadow Z' , which stems from a hidden $U(1)_s$ gauge sector can weakly couple to the standard model fermions through the kinematic mixing between the $U(1)_s$ and the hypercharge $U(1)_Y$. If the shadow Z' is light, $< m_Z$, it can easily evade all collider constraint as long as the kinematic mixing term is small. We study the feasibility of probing the light shadow Z' gauge boson with the low energy parity violating $e - p$, $e - d$, and $e - e$ scattering and the correlations among the experiments.

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