

A Search for Long-Lived Neutral Particles Decaying to Dijets

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Abstract

A search is performed for long-lived massive neutral particles decaying to quark-antiquark pairs. The experimental signature is a distinctive topology of a pair of jets originating at a secondary vertex. Events were collected by the CMS detector at the LHC during pp collisions at $\sqrt{s} = 8$ TeV, and selected from data samples corresponding to 18.6 fb^{-1} of integrated luminosity. No significant excess is observed above standard model expectations, and an upper limit is set with 95% confidence level on the production cross section of a heavy scalar resonance, decaying to two long-lived massive neutral particles, each decaying to quark-antiquark pairs, as a function of the long-lived massive neutral particle lifetime.

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