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Leptophobic B-boson searches with $\eta \to \pi^0\gamma\gamma$ and $\phi \to \pi^0\eta\gamma$ decays

Saturday, 27 June 2026 12:30 (20 minutes)

The possibility for the existence of a leptophobic $U(1)$ gauge boson associated to baryon symmetry is scrutinized in the MeV-GeV mass range by means of an exhaustive analysis of the corresponding golden channels $\eta \to \pi^0\gamma\gamma$ and $\phi \to \pi^0\eta\gamma$.
Using the latest experimental data on these two processes and taking also into account the Standard Model contributions from scalar and vector meson exchanges, we are able to obtain the best 95% exclusion limits up to date for the mass m_B and coupling α_B to known particles of this hypothetical B boson.

Collaboration

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