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Radion Portal Dark Matter in Stabilized Warped Extra-Dimensions

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We analyze dark matter (DM) annihilation in a stabilised Randall-Sundrum (RS) model, where the radion—the lightest spin-0 Kaluza-Klein state—acts as a portal between DM and the Standard Model (SM).

By recasting limits from axion-diphoton couplings and collider searches for spin-0 resonances, we constrain the radion's parameter space and demonstrate that Weakly Interacting Massive Particles (WIMPs) in the 100–500 GeV mass range can satisfy the observed relic abundance while evading direct detection and collider bounds.

Furthermore, the theoretical framework of RS models mandates a sub-TeV radion mass, ergo distinguishing it from ad-hoc dilaton portals where the radion mass is a free parameter.

Secondary track

T02 - Dark Matter

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