

Search for new physics in ρ^0 decays in NA64

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The NA64 experiment at the CERN SPS is designed to search for dark photons in events with missing energy. The most studied production mechanism is dark Bremsstrahlung through a vector mediator. Bremsstrahlung photons can convert to hard vector mesons in exclusive photoproduction processes, which then decay to dark matter (DM). The vector meson decays invisibly to DM via mixing with the dark photon. The possibility of ρ^0 invisible decay will be discussed. An alternative possibility of studying the decays of the rho meson (into $\mu\mu$) will also be highlighted.

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