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Search for Massive Long Lived Particles, quirks, and potential valleys at the Tevatron

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New physics can present itself in many different ways, in some scenarios, some of the postulated new particles can have a lifetime that allows them to escape typical particle detectors before decaying. In others, potential new particles with relatively light masses are hypothesized to exist in a "potential valley"separated from the SM by a high potential barrier. Yet a third postulate are quirks, a hypothetical new fermion bound by a new SU(N) "infracolor" gauge coupling in which the breaking of the "infracolor" string is exponentially suppressed, implying the bound states can have even macroscopic size. We present the latest search results of for such particles at the Fermilab Tevatron collider.

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