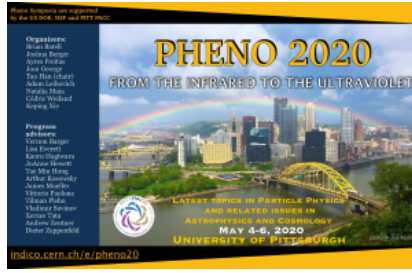


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Full Run 2 Results for Disappearing Tracks at CMS

Tuesday 5 May 2020 18:15 (15 minutes)

CMS has recently submitted results for a search for disappearing tracks, updated to include the full Run 2 LHC data set. The disappearing track signature would be produced by long-lived charged particles that decay within the volume of the silicon tracker, and is identified as an isolated track with no associated hits in the muon detectors, little energy deposited in the calorimeters, and missing hits in the outermost tracker layers. The addition of a fourth inner layer in the Phase 1 pixel tracker upgrade enables this search to accept shorter tracks, increasing the sensitivity to shorter lifetime particles. The observed events are consistent with estimated backgrounds, and upper limits are set on chargino production in the context of anomaly-mediated supersymmetry breaking using the complete Run 2 LHC data set. These constraints are the most stringent to date.

Summary

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