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Search for stopped gluinos and Heavy Stable Charged Particles at CMS in pp collisions at sqrt(s)=7 TeV

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We report the preliminary results of searches for long-lived particles produced in 7 TeV pp collisions from CERN's Large Hadron Collider. A signature-based search for heavy stable charged particles using a high transverse-momentum muon trigger was performed. The search uses time-of-flight and ionization energy loss to isolate slowly moving, heavy, high transverse momentum particles. This result is interpreted within the context of stable stop squark and gluino models. We have also looked for long-lived particles which have stopped in the CMS detector. We search for the subsequent decay of these particles during time intervals where there were no pp collisions. In particular, we search for decays during gaps between crossings in the LHC beam structure as well as the inter-fill period between the beam being dumped and re-injection using a dedicated calorimeter trigger.

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