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Search for Heavy Stable Charged Particles in the CMS Experiment

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Several theoretical models inspired in the idea of supersymmetry (SUSY) accommodate the possibility of HSCPs (Heavy Stable Charged Particles). The phase-II upgrade of the CMS-RPC system will allow the trigger and identification of these kind of particles exploiting the Time of Flight Technique with the improved time resolution that a new DAQ system will provide (˜1ns). Moreover new RPC chambers will be installed to extend the acceptance coverage up to $|\eta| < 2.1$ with similar time resolution and better space resolution to complement this search.

In this poster a trigger strategy to detect HSCPs with the RPC detectors is presented, its performance is studied with Monte Carlo simulations and the expected results with the High Luminosity LHC data are shown.

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