



MEETING OF THE AMERICAN PHYSICAL SOCIETY DIVISION OF PARTICLES AND FIELDS

Contribution ID: 34

Type: **Presentation**

## Search for supersymmetry in multijet events with missing transverse momentum in proton-proton collisions at 13 TeV

*Monday, 31 July 2017 11:13 (16 minutes)*

A search for supersymmetry is presented based on multijet events with large missing transverse momentum produced in proton-proton collisions at center-of-mass energy  $\sqrt{s} = 13$  TeV. The data, corresponding to an integrated luminosity of 35.9 fb<sup>-1</sup>, were collected with the CMS detector at the CERN LHC in 2016. The analysis utilizes four-dimensional exclusive search regions defined in terms of the number of jets, the number of tagged bottom quark jets, the scalar sum of jet transverse momenta, and the magnitude of the vector sum of jet transverse momenta. No evidence for a significant excess of events is observed relative to the expectation from the standard model. Limits on the pair production of gluinos and squarks are derived in the context of simplified models. Assuming the lightest supersymmetric particle to be a weakly interacting neutralino, 95% confidence level lower limits on the gluino mass as large as 1800 to 1960 GeV are derived, and on the squark mass as large as 960 to 1390 GeV, depending on the production and decay scenario.

**Primary author:** PEDRO, Kevin (Fermilab)

**Presenter:** PEDRO, Kevin (Fermilab)

**Session Classification:** Beyond Standard Model

**Track Classification:** Beyond Standard Model