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Search for new Physics in the dijet mass spectrum and dijet ratio in pp Collisions at sqrt(s) = 7 TeV

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We report on a search for new physics in dijet production at CMS, using the first pp collision data at sqrt{s}=7 TeV provided by CERN's Large Hadron Collider. The measured dijet mass spectrum is compared with QCD predictions. We use the dijet mass spectrum to search for dijet resonances that could come from several models, such as, axigluons, flavor univerals colorons, excited quarks or E6 diquarks.We have also measured the production ratio for events with two leading jets in two regions of pseudorapidity. The dijet centrality ratio, N(|η| < 0.7)/N(0.7 < |η| < 1.3), is sensitive to dijet angular distributions. The dijet centrality ratio is measured in bins of dijet mass, compared with the predictions of QCD, and used to search for the following new physics models: quark contact interactions and excited quarks.

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