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Search for low mass dijet resonances at CMS

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We present several complementary searches for low mass dijet resonances using a 35.9 inverse femtobarn data set of proton-proton collisions at 13 TeV collected with the CMS experiment at the LHC in 2016. One search uses the CMS scouting data stream concept to record larger data rates than otherwise possible. Another search uses an initial state radiation jet to overcome trigger thresholds and search for boosted dijet resonances, whose decay products are merged into a single jet. Novel jet substructure techniques are used to avoid sculpting the distribution of the jet mass distribution and the dominant background is estimated from data. Both searches are interpreted in the context of leptophobic vector resonances and simplified models of dark matter with a leptophobic mediator. This approach has also been extended to the search for boosted Higgs bosons decaying to bottom quark-antiquark pairs.

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