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Microscopic Black Holes in the Large Hadron Collider GAGE DEZOORT, JIWON HAN, University of Virginia, MARTIN KWOK, GREG LANDSBERG, Brown University, CHRIS NEU, TUTANON SINTHUPRASITH, University of Virginia, CMS COLLABORATION COLLABORATION — CERN's Large Hadron Collider (LHC) is the largest experimental particle physics facility in the world, capable of colliding protons with energies of up to 13 TeV. Many theoretical models describe exotic new physics that takes place in these high energy collisions, including the production of microscopic black holes. Using recent CERN collision data, we have conducted a search for semiclassical and quantum black holes, as well as string balls, objects predicted by string theory. In conducting this search, we have set limits on the rate of black hole / string ball production for a few specific models. Additionally, we have set model independent limits on the production rate of new physics for certain final states.

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