Physics & Astronomy Colloquium – Fall 2020

Tuesday, Dec 1st at 3:30 pm

(Zoom colloquia: Please find the meeting information below)

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Searches for very heavy resonances using highly Lorentz-boosted objects

In the past decade, the Large Hadron Collider has probed higher energy scale than ever before. Most models of beyond-standard-model (BSM) physics predict the production of new heavy particles; the LHC results have excluded lower masses of such particles. This makes the high-mass regions especially interesting for current and future searches. In most BSM scenarios of interest, the new heavy resonances decay to standard model particles. In a subset of these models, the new particles have large couplings to the top quark, or to the W and Z bosons, or to the Higgs boson. The top quark and W, Z, and Higgs bosons often decay to quarks, giving rise to jets of particles with `substructure'. In this talk, I will cover the key concepts in experimental searches based on the jet substructure, and review the recent results from the CMS experiment.

Zoom meeting ID: 995 291 7599 Passcode: PHAS

(Find more information at Department Colloquia Webpage)