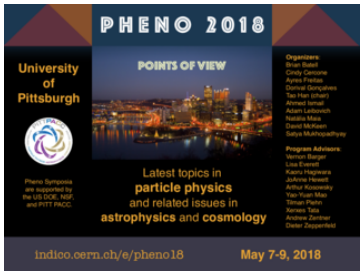

Contribution ID: **442** Type: **parallel talk**

FASER

Tuesday 8 May 2018 15:15 (15 minutes)

New physics has traditionally been expected in the high-pT region at high-energy collider experiments. If new particles are light and weakly-coupled, however, this focus may be completely misguided: light particles are typically highly concentrated within a few mrad of the beam line, allowing sensitive searches with small detectors, and even extremely weakly-coupled particles may be produced in large numbers there. We propose a new experiment, ForwArd Search ExpeRiment, or FASER, which would be placed downstream of the ATLAS or CMS interaction point in the very forward region and operated concurrently there. As a concrete example of light, weakly-coupled particles, we consider dark photons, dark Higgs bosons, ALPs and sterile neutrinos. We find that even a relatively small and inexpensive cylindrical detector can discover such particles in a large and unprobed region of parameter space.

Summary

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