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The Status of the milliQan Experiment

Tuesday, August 6, 2019 2:30 PM (12 minutes)

Summary

The status of the milliQan experiment is discussed. milliQan is a proposed search for milli-charged particles produced at the LHC with expected sensitivity to charges of between $0.1e$ and $0.001e$ for masses in $0.1 - 100$ GeV range. The proposed detector is an array of 4 stacks of 60 cm long plastic scintillator arrays read out by PMTs. It will be installed in an existing tunnel 33 m from the CMS interaction point at the LHC, with 17 m of rock shielding to suppress beam backgrounds. In the fall of 2017, a 1% scale “demonstrator” of the proposed detector was installed at the planned site in order to study the feasibility of the experiment, focusing on understanding various background sources such as radioactivity of materials, PMT dark current, cosmic rays, and beam-induced backgrounds. In this talk, I will discuss the general concept of the experiment, the results from the demonstrator, and the plan for the future.

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