



Contribution ID: 431

Type: Oral Presentation

## Exploration of the dark sector with the Fermilab dimuon experiment

*Tuesday 30 July 2019 14:54 (18 minutes)*

Searches for dark-matter particles at the GeV mass scale have been receiving much attention in the last several years, partly motivated by the failure of direct and indirect searches of heavier candidates to produce a signal. The SpinQuest dimuon experiment in the 120-GeV Main-Injector proton beam at Fermilab, currently in the commissioning stage, is uniquely equipped to search for dark photons and dark Higgs particles produced in a 5-m long iron beam dump with masses in the range 0.2 - 10 GeV, running in a parasitic mode. This only requires a modest upgrade of a displaced-vertex trigger with acceptance for dark-sector particles decaying into dimuons inside or downstream of the dump. We discuss the physics reach of such a run, the status, and some additional future prospects.

**Author:** PAPAVALASSIOLIOU, Vassili (New Mexico State University)

**Presenter:** PAPAVALASSIOLIOU, Vassili (New Mexico State University)

**Session Classification:** Beyond Standard Model

**Track Classification:** Beyond Standard Model Physics