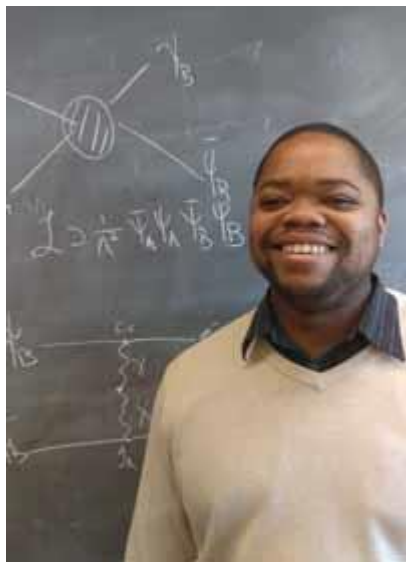




LABORATORY FOR ELEMENTARY-PARTICLE PHYSICS (LEPP)

Joint Experimental and Theory Seminar in Particle Physics and Cosmology:



**Gopolang
Mohlabeng
BNL**

Revisiting the Dark Photon Interpretation of the Muon $g-2$ anomaly

We investigate the parameter space in which the dark photon may still explain the muon $g-2$ anomaly. We consider a model of an inelastic dark sector which couples directly to the dark photon. This scenario may lead to semi-visible decays of the dark photon leading to a parameter space in which the dark photon interpretation of the muon $g-2$ anomaly may still be viable as opposed to both exclusively visible and invisible decays, which have been excluded by experiments. Furthermore, we show that one of the dark sector states may contribute to the required dark matter relic abundance. It is possible that the semi-visible events we discuss, may have been vetoed by experiments searching for the invisible dark photon decays, such as BABAR

Friday, May 11, 2018

1:00pm

401 Physical Sciences Bldg.