



Contribution ID: 381

Type: **Poster**

Dark photon DM search in 6-8 eV energy range with URIDA Experiment

Monday 28 August 2023 19:38 (1 minute)

The dark photon emerges as an additional gauge boson in a $U(1)$ Standard Model extension and is coupled to the ordinary photon via kinetic mixing. To investigate the energy band from 6-8 eV, where photons are highly absorbent due to molecular oxygen with an absorption length on the order of cm at atmospheric pressure, we developed the Ultraviolet Range Initiated photons from Dark-photons in Ambient (URIDA) Experiment, motivated by other work. In order to minimize attenuation, the detection system was housed in a vacuum chamber. We constructed our detector system using low dark rate photomultipliers that are sensitive at these energies and included an aluminum reflector similar to the FUNK experiment to enhance collection. Results on performance and preliminary sensitivity will be reported

Submitted on behalf of a Collaboration?

No

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Session Classification: Poster session

Track Classification: Dark matter and its detection