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Search for dark photon DM in 6-8 eV energy range with URIDA Experiment.

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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 photo-multipliers 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.

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