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Miguel Daal (UCSB): Light Bosonic Dark Dark Matter Search Using Microwave Kinetic Inductance Detectors (MKIDs)

Thursday, 22 February 2018 16:48 (14 minutes)

We describe a proposed small-scale direct detection experiment to search for dark matter in the form of vector bosons in the mass range 0.1 to 10 eV/ c^2 , i.e. dark photons. The experiment is designed so that dark photon absorption onto electrons would create quasi-particles in 2500 superconducting aluminum absorbers, which would all fit on a 4 inch wafer. The quasi-particles would be trapped and concentrated into MKIDs, allowing us to determine event energy, location and time. We will present estimates of the backgrounds and sensitivity for our sea-level experiment. We expect that the scientific reach is orders of magnitude below existing indirect constraints.

Presenter: DAAL, Miguel (UCSB)

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