

Searches for new physics using levitated optomechanics

Wednesday 16 December 2020 11:00 (1 hour)

In an attempt to provide further insight into one of the major questions of physics beyond the standard model, new, highly sensitive, optomechanical sensors are employed utilizing techniques synchronous with those of the atomic physics community. These sensors are table-top experimental tools offering exquisite control of mechanical and electrical degrees of freedom and isolation from the environment. They enable unprecedented acceleration sensitivities for $\tilde{\nu}$ ng objects, while still maintaining the access needed to probe short-ranged dynamics.

In my talk I will present the experimental setup and show results from two recent searches, one looking for small recoils from passing DM particles and the other for slight deviations from charge neutrality, opening a window into an exploration of dark matter particles bound to matter that may carry tiny electric charge. In both searches our results are complementary to much large-scale experiments.

Join Zoom Meeting

<https://technion.zoom.us/j/98348235450?pwd=SktiOFNhVS8waFU3bzBISjlkV2lqZz09>

Meeting ID: 983 4823 5450

Passcode: HEP_joint

Presenter: AFEK, Gadi (Yale)