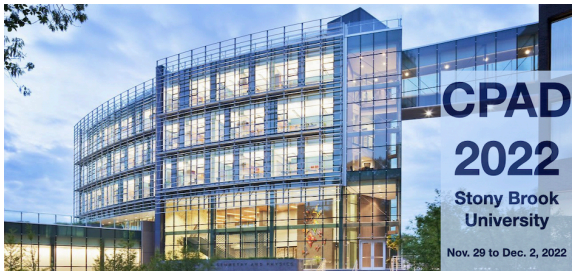

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Measuring the Migdal Effect

Thursday, 1 December 2022 09:10 (20 minutes)

Searches for sub-GeV dark matter direct detection have been dominated by dark matter electron scattering. However, an inelastic scattering process known as the "Migdal effect", in which an atomic electron is ionized during a nuclear recoil, has been shown to greatly enhance the sensitivity of nuclear recoil experiments to sub-GeV dark matter. In this talk an experimental strategy to calibrate the Migdal effect in silicon and noble element detectors is shown, based on derivations of the Migdal angular spectrum for neutron scattering. Moreover we discuss the importance of these calibration measurements in the next generation of direct detection experiments.

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Session Classification: Cross Cutting Topics

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