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Direct Observation of the Migdal effect on D-D source

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The Migdal effect has attracted considerable attention in recent years due to its significant contribution to the sensitivity of sub-GeV dark matter detectors in theoretical calculations. This report will present our experiment that directly observes the Migdal effect using the gas micropixel detector designed by MARVEL group at a D-D neutron source. We will introduce the detector structure and performance test results, the details of the D-D beam experiment, as well as the data analysis and relevant outcomes. Finally, we will talk about the detector upgrade progress and the subsequent data acquisition plan.

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Session Classification: Migdal search