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First measurement Results from DANAE – Demonstrating DePFET RNDR on a prototype Matrix

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In the search for dark matter particle candidates, the mass region below 1 GeV/c2 is mainly unprobed. Utilizing a low-noise silicon sensor as sensitive volume, we aim to detect the signal from an inelastic scattering between such a particle and a bound electron within the silicon. As the deposited energy is only a few eV of energy, a sensor capable of detecting such low signals is required. We are presenting first measurements on a small prototype matrix. It is based on the DePFET repetitive non destructive readout and provides low readout noise of 0.2 e- and below.

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