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Skipper-CCDs performance in CONNIE

The Coherent Neutrino-Nucleus Interaction Experiment (CONNIE), located at sea level at about 30 m from the core of the 3.8 GW Angra 2 nuclear reactor in Brazil, aims to detect the coherent elastic scattering of reactor antineutrinos (CEvNS). The experiment has operated from 2016 to 2020 using 12 fully depleted high-resistivity 4k x 4k CCDs (Charge Coupled Devices) with 6 g each, with a readout noise better than 2 electrons RMS and a single electron rate of about 1e-/pix/day. Recently, two Skipper-CCDs were installed in the experiment, together with a new electronics developed for those sensors, to characterize their capability to lower down the detection threshold and to study the background response. The first data collected show a readout noise of 0.16 electrons RMS and a single electron rate better than 0.09 e-/pix/day. In this presentation we will discuss the performance and stability of the Skipper-CCDs, and also will show the measured background spectrum above 15 eV and discuss the prospects for detecting CEvNS with this new detector technology.

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