Abstract Submitted
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Electronics development for the full implementation of the Neutron dEtector with Xn Tracking (NEXT) array[1] NORITAKA KITAMURA, ROBERT GRZYWACZ, SHREE NEUPANE, JOSEPH HEIDEMAN, JASON CHAN, University of Tennessee, Knoxville — Beta-delayed neutron spectroscopy is essential to obtain nuclear structure information of very neutron-rich unstable nuclei. The Neutron dEtector with Xn Tracking (NEXT) array was designed to enable high-resolution neutron energy measurements via the time-of-flight method while maintaining high neutron detection efficiency [1]. Following the initial design phases of NEXT prototypes, the construction of 40 NEXT modules is ongoing. For the full implementation of the NEXT array, dedicated high-density triggering and readout schemes are required, and thus the readout electronics have been continuously improved. We will present NEXT construction status with a special focus on its electronics developments. [1] J. Heideman et al., Nucl. Instrum. Methods Phys. Res., Sect. A 946, 162528 (2019).

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