Abstract Submitted
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A Digital Data Acquisition for VANDLE[1] MIGUEL MADURGA, S. PAULAUSKAS, University of Tennessee at Knoxville, ROBERT GRZYWACZ, University of Tennessee at Knoxville / Oak Ridge National Laboratory, DAVID MILLER, STEPHEN PADGETT, University of Tennessee at Knoxville, HUI TAN, XIA LLC — Neutron energy measurements can be achieved using time-of-flight (ToF) techniques. A digital data acquisition system was developed for reliable ToF measurements with subnanosecond timing resolution based on digitizers with 10ns and 4 ns sampling periods using pulse shape analysis algorithms. A validation procedure was developed to confirm the reliability. The response of the algorithm to photomultiplier signals was studied using a specially designed experimental system based on fast plastic scintillators. The presented developments enabled digital data acquisition systems to instrument the recently developed Versatile Array of Neutron Detectors at Low-Energy (VANDLE)[1,2].

[1] C. Matei et al., Proceedings of Science, NIC X, 138 (2008)
[2] S. V. Paulauskas et al., NIMA 797, 22 (2014)

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