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Neutron Production from In-situ Heavy Ice Coated Targets at Vulcan[1] JOHN MORRISON, AFRL, WPAFB, A.G. KRYGIER, LULI, S. KAR, H. AHMED, A. ALEJO, Queens University Belfast, R. CLARKE, CLF, RAL, J. FUCHS, LULI, A. GREEN, D. JUNG, Queens University Belfast, A. KLEINSCHMIDT, Institut für Kernphysik, Technische Universitt Darmstadt, Z. NAJMUDIN, H. NAKAMURA, Imperial College London, P. NORREYS, University of Oxford, M. NOTLEY, CLF, RAL, M. OLIVER, University of Oxford, M. ROTH, Institut für Kernphysik, Technische Universitt Darmstadt, L. VASSURA, LULI, M. ZEPF, Helmholtz Institut Jena, M. BORGHESI, Institute of Physics ASCR, R.R. FREEMAN, The Ohio State University — Laser based neutron production experiments have been performed utilizing ultra-high intensity laser accelerated ions impinging upon a secondary target. The neutron yield from such experiments may be improved if the accelerated ions were primarily deuterons taking advantage of the d-d cross section. Recent experiments have demonstrated that selective deuteron acceleration from in-situ heavy ice coating of targets can produce ion spectra where deuterons comprise $> 99\%$ of the measured ions. Results will be presented from integrated neutron production experiments from heavy ice targets coated in-situ recently performed on the Vulcan laser at Rutherford Appleton Laboratory.

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