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Nuclear Reaction Dynamics of the $^{10}\mathrm{B}(d,n_0)^{11}\mathrm{C}$ Reaction Below 160 keV[1] S. STAVE, M.W. AHMED, M.A. BLACKSTON, A.S. CROWELL, S.S. HENSHAW, C.R. HOWELL, P. KINGSBERRY, B.A. PERDUE, H.R. WELLER, Duke U. & TUNL, B.L. DOYLE, P. ROSSI, A.J. ANTOLAK, Sandia National Lab, R.M. PRIOR, M.C. SPRAKER, NGCSU & TUNL — Data were taken at TUNL to investigate the plausibility of using low energy deuterons and the $^{10}\mathrm{B}(d,n)^{11}\mathrm{C}$ reaction as a source of 6.3 MeV neutrons. An analysis of the data at incident deuteron energies of 160 keV and 140 keV and neutron angles between 0° and 150° indicates an n_0 neutron cross section that is lower than previous estimates by at least two orders of magnitude. In order to gain insight into the reaction dynamics at these low energies the cross section results have been compared with results from calculations using the distorted wave Born approximation (DWUCK) and a detailed Hauser-Feshbach calculation performed by the authors.

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