

Abstract Submitted
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Proton-transfer study of unbound ^{19}Ne states via $^2\text{H}(^{18}\text{F},\alpha+^{15}\text{O})\text{n}$ ¹ C.R. BRUNE, A. ADEKOLA, Z. HEINEN, M.J. HORNISH, T.N. MASSEY, A.V. VOINOV, Ohio University, D.W. BARDAYAN, J.C. BLACKMON, C.D. NESARAJA, M.S. SMITH, Oak Ridge National Laboratory, K. CHAE, Z. MA, U. of Tenn, A.E. CHAMPAGNE, D.W. VISSER, UNC - Chapel Hill, K.L. JONES, S.D. PAIN, J.S. THOMAS, Rutgers, U. GREIFE, R. LIVESAY, M. PORTER-PEDEN, F. SARAZIN, Colorado School of Mines, M. JOHNSON, Oak Ridge Assoc. U., C. DOMIZIOLI, R.L KOZUB, B. MOAZEN², Tenn Tech U. — The nuclear structure of ^{19}Ne near the proton threshold is of interest for understanding the rates of proton-induced reactions on ^{18}F in novae. The proton transfer reaction $^{18}\text{F}(d,n)^{19}\text{Ne}$ has been measured by bombarding a $720\text{-}\mu\text{g}/\text{cm}^2$ CD_2 target with a 150-MeV $^{18}\text{F}^{9+}$ beam at ORNL's Holifield Radioactive Ion Beam Facility. The ^{19}Ne states of interest near the proton threshold decay by breakup into $\alpha + ^{15}\text{O}$ which are detected in coincidence with position-sensitive $E - \Delta E$ Si telescopes. The reconstruction of the relative energy reveals the excited states of ^{19}Ne which are populated. The mirror reaction $^2\text{H}(^{18}\text{F},\alpha+^{15}\text{N})\text{p}$ has been measured simultaneously. The implications for the $^{18}\text{F}(p,\alpha)^{15}\text{O}$ reaction and ^{19}Ne - ^{19}F mirror symmetry will be discussed.

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