Abstract Submitted
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Single Particle Strengths from the (d,p) Reaction on ^{18}F R.L. KOZUB, Tenn. Technological U., D.W. BARDAYAN, J.C. BLACKMON, C.J. GROSS, C.D. NESARAJA, J.P. SCOTT, D. SHAPIRA, M.S. SMITH, Oak Ridge National Lab., J.C. BATCHELDER, UNIRIB, C.R. BRUNE, Ohio U., A.E. CHAMPAGNE, UNC-Chapel Hill, L. SAHIN, Dumlupinar U., J.A. CIZEWSKI, J.S. THOMAS, Rutgers, U. GREIFE, C.C. JEWETT, R.J. LIVESAY, Col. Sch. Mines, Z. MA, B.H. MOAZEN, UT-Knoxville — The ^{19}F nucleus has been studied extensively. However, there have previously been no direct measurements of ^{18}F+n single-particle components in ^{19}F, and no measure of neutron vacancies in the ^{18}F ground state, as such experiments require a (radioactive) ^{18}F target or beam. We have used the ^{2}H(^{18}F,p)^{19}F reaction to selectively populate such states in ^{19}F. The 108.5-MeV radioactive ^{18}F^{+9} beam was provided by the HRIBF at ORNL. Proton-recoil coincidence data were taken for both α-decaying and particle-stable final states. Angular distributions and spectroscopic factors were measured for eight proton groups, corresponding to 12 states in ^{19}F. The results will be compared to model calculations. Results for states of astrophysical significance were reported earlier.[1]

[1]R. L. Kozub *et al.*, Phys. Rev. C 71, 032801 (R) (2005).

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