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Astrophysical measurements with radioactive ^{17}F beams at HRIBF[1] D.W. BARDAYAN, C.D. NESARAJA, S.D. PAIN, M.S. SMITH, ORNL, K.A. CHIPPS, U. GREIFE, Col. School Mines, J.C. BLACKMON, LSU, K.Y. CHAE, B.H. MOAZEN, S.T. PITTMAN, U. Tenn., R. HATARIK, W.A. PETERS, Rutgers, R.L. KOZUB, J.F. SHRINER, JR., Tenn. Tech., C. MATEI, ORAU — The astrophysical rates of the ^{14}O$(\alpha,p)^{17}$F and ^{17}F$(p,\gamma)^{18}$Ne reactions affect the transition to the αp-process in x-ray bursts and ^{18}F production in novae, respectively. Both reactions have been studied in the laboratory with the intense radioactive ^{17}F beams delivered at HRIBF. Recently beam intensities greater than 10^7 ^{17}F ions/s have become available, making possible the first direct measurement of the ^{17}F $(p,\gamma)^{18}$Ne cross section [K. A. Chipps et al., Phys. Rev. Lett. 102, 152502 (2009)]. These high beam intensities also provide an opportunity to make the first precise determination of the resonance strength of the 1^- ^{14}O $(\alpha,p)^{17}$F resonance near $E_{c.m.}$=1 MeV. Recent results and upcoming plans for measurements with ^{17}F beams at the HRIBF will be presented.

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