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Particle Decay of the 6.15 MeV Level in ^{18}Ne[1] K.A. CHIPPS, S.D. PAIN, Oak Ridge National Laboratory, P. THOMPSON, University of Tennessee Knoxville/Oak Ridge National Laboratory, R.L. KOZUB, Tennessee Technological University, JENSA COLLABORATION — The ^{14}O(α,p)^{17}F reaction rate is important as a trigger reaction in x-ray bursts and has significant impact on the burst light curve and final abundances. In addition, the reaction provides a pathway to alter the ratio of ^{14}O to ^{15}O in the accreted material over time. A $J^\pi = 1^-$ resonance in ^{18}Ne above the ^{14}O+α threshold is expected to dominate the reaction rate at temperatures relevant to Type I x-ray bursts, but the particle decay widths for this level are not well known. The relative strengths of the proton decay branches to the ground and first excited state of ^{17}F, which are critical to calculation of the reaction rate from the time-inverse reaction ^{17}F(p,α)^{14}O, are not fully constrained. Potentially competing alpha and even 2p decays may also be important. To address these discrepancies, ^{20}Ne(p,t)^{18}Ne data from the JENSA gas jet target system were examined, utilizing a new technique to observe particle decays of the excited levels in ^{18}Ne. The technique and preliminary results will be presented, along with plans for a future jet target system for reaccelerated beams from FRIB.

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