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Proton Capture on 34S in the Astrophysical Energy Regime[1]
MATTHEW LOVELY, Colorado Sch of Mines, DEVIN CONNOLLY, Los Alamos National Lab, JONATHAN KARPESKY, Colorado Sch of Mines, STEPHEN GILLESPIE, TRIUMF National Lab, PATRICK O'MALLEY, University of Notre Dame, ALEN CHEN, McMaster University, BARRY DAVIDS, ANNIKA LENNARZ, TRIUMF National Lab, ALISON LAIRD, University of York, CHRIS RUIZ, DAVE HUTCHEON, TRIUMF National Lab, UWE GREIFE, Colorado Sch of Mines, DRAGON COLLABORATION — Novae are explosive astrophysical events which provide a unique environment for nucleosynthesis. Oxygen-Neon(O-Ne) novae caused by the thermonuclear runaway of accreted material on the white dwarf of a close binary system can reach peak temperatures of 0.1-0.4 GK. These novae are particularly important for the production of higher mass nuclides through complex reaction networks. Many of the resonance strengths in these networks have been theoretically calculated and lead to a large degree of uncertainty in the final production of the nova. One reaction of particular importance for these processes is the proton capture on 34S at energies relevant to nova nucleosynthesis. Previously, this reaction has been measured above Ecm=495 keV but here we will discuss the recent direct measurement conducted at DRAGON in inverse kinematics from Ecm=272 keV to 495 keV.

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