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22Ne(α, n)25Mg at the INFN Bellotti Ion Beam Facility

Monday 9 June 2025 18:50 (5 minutes)

Neutron capture reactions are the main contributors to the synthesis of the heavy elements through the sprocess. $22Ne(\alpha, n)25Mg$ is the main neutron source in stars together with $13C(\alpha, n)16O$. In the relevant stellar energy (450 keV < Ecm < 750 keV) few data are available, I.e. reaction cross section upper limits from direct experiments and highly uncertain estimates from indirect sources exist. The ERC project SHADES (UniNa/INFN) is currently performing direct cross section measurements at these energies. We will present details on the ongoing experiment and discuss target characteristics, experimental backgrounds and preliminary analyses on the detector efficiency and the 832 keV resonance.

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