

$^{14}\text{N}(p,\gamma)^{15}\text{O}$ data at high energy

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The $^{14}\text{N}(p,\gamma)^{15}\text{O}$ reaction determines the rate of the CNO cycle because it's the slowest nuclear reaction of the cycle. For a precise cross section extrapolation to low energies one needs accurate knowledge of the excitation function over a wide range of energy. Therefore the non-resonant cross section of $^{14}\text{N}(p,\gamma)^{15}\text{O}$ was studied at beam energies of 0.5 - 1.5 MeV at the 3 MV Tandatron of Helmholtz-Zentrum Dresden-Rossendorf. The talk presents the preliminary new data for the cross section of $^{14}\text{N}(p,\gamma)^{15}\text{O}$. With a R-matrix fit they could contribute to a more accurate extrapolation to the astro-physically relevant cross section at the Gamow-window of the reaction.

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