

## The $^{14}\text{N}(p, \gamma)^{15}\text{O}$ S factor at 0.4 – 1.5 MeV

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The  $^{14}\text{N}(p, \gamma)^{15}\text{O}$  reaction rate determines the rate of the CNO cycle of hydrogen burning. For a precise cross section extrapolation to low energies one needs accurate knowledge of the excitation function over a wide range of energy. The non-resonant  $^{14}\text{N}(p, \gamma)^{15}\text{O}$  cross section was studied at beam energies of 0.4 - 1.5 MeV at the 3 MV Tandatron of Helmholtz-Zentrum Dresden-Rossendorf. The preliminary new cross section data will be presented. Combined with data of experiments at other proton energies [1], [2] an R-Matrix fit is performed to achieve a more accurate extrapolation to the astro-physically relevant cross section at the Gamow-window of the reaction.

[1] A. Formicola et al, *Phys. Letters B* 591 (2004)

[2] R. C. Runkle et al, *Phys. Rev. Letters* 94, 082503 (2005)