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Study of the 2H(p,g)3He cross section at Ep=400-800 keV

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The amount of deuterium produced in Big Bang Nucleosynthesis depends sensitively on cosmological parameters such as the baryon energy density and the effective number of neutrino species. The recently improved precision of astronomical measurements of the primordial deuterium abundance calls also for more precise nuclear data. Currently, the precision of the Big Bang abundance prediction of 2H is limited to the uncertainty of 2H destruction in the 2H(p,g)3He reaction. The same nuclear reaction also affects Big Bang production of 7Li and plays a role in solar physics. The present contribution reports on an experimental study of the 2H(p,g)3He cross section at energies of Ep=400-800 keV, recently performed at the HZDR 3 MV Tandetron accelerator in Dresden, Germany.

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