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Proton Capture on ^{12}C[1] JOACHIM GOERRES, Univ of Notre Dame, KARL-ULRICH KETTNER, FH Bielefeld, HANS-WERNER BECKER, Ruhr Univ. Bochum, RICHARD J. DEBOER, ETHAN UBERSEDER, MICHAEL C. WIESCHER, Univ of Notre Dame — During explosive Hydrogen burning the ^{12}C(p,γ)^{13}N reaction is the entry point which injects ^{12}C, newly produced by the triple α-process, into the hot CNO cycle. At solar temperatures this reaction is one of the two sources for neutrinos within the CNO cycle whose observation would provide a test for the SSM. The capture cross section is determined by 2 resonances, the direct capture to the ground state as well as interferences between these components. To investigate uncertainties found in the literature for the 1.7 MeV resonance we have measured this reaction in the energy of 1.2 to 2.5 MeV. Detailed excitation functions were measured at 0° and 55° and complemented by angular distributions measured in 100 keV steps. The results of this experiment will be reported together with R-matrix fits over the entire energy range of astrophysical interest.

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