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Determination of the astrophysical S-factor for the ^{12}N(p,γ)^{13}O reaction from (^{12}N,^{13}O) proton transfer reaction A. BANU, T. AL-ABDULLAH, C. FU, C.A. GAGLIARDI, Y. LI, M. MCCLESKEY, G. TABACARU, L. TRACHE, R.E. TRIBBLE, Y. ZHAI, Cyclotron Institute,Texas A&M University, College Station, TX 77843, V. BURJAN, Institute of Nuclear Physics, Czech Academy of Sciences, Prague, Czech Republic, F. CARSTOIU, IFIN-HH, Bucharest, Romania — The reaction rate for the radiative proton capture on the drip line nucleus ^{12}N was determined using the indirect Asymptotic Normalization Coefficient (ANC) method. This reaction is important for studying the nucleosynthesis in Population III stars with low-metallicity. A 23 MeV/nucleon ^{12}C primary beam from the K500 cyclotron at Texas A&M University was employed. Secondary ^{12}N beam of 2×10^5 pps was separated using the recoil spectrometer MARS. The ^{14}N(^{12}N,^{13}O)^{13}C proton transfer reaction at 12 MeV/nucleon was measured to extract the ANC for the virtual decay ^{13}O->^{12}N + p. The ANC was then used to determine the direct component of the astrophysical S-factor. The results of this measurement will be discussed.

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