¹**H**(¹²**N**,**p**):res 2007Sk02

	History		
Туре	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu and J. E. Purcell	NDS 198,1 (2024)	1-Aug-2024

2003Te09, 2003Te12: ¹H(¹²N,p) E=3.9 MeV/nucleon; Used two parallel-plate avalanche counters to tag events by nuclide and to monitor angular spread. Si detectors measured recoil proton spectra. Deduced resonance at $E_p \approx 4.5$ MeV ($E_x \approx 2.7$ MeV). 2007Sk02: ${}^{1}H({}^{12}N,p)$ produced the 46 MeV ${}^{12}N^{7+}$ beam via ${}^{10}B({}^{3}He,n)$ reaction at $E({}^{10}B)=43$ MeV. Used a CH₂ polyethylene

target. At E(c.m.)=0.8-2.7 MeV, measured elastic scattering E_p excitation at θ =7.5°, 22.5° and 37.5° using three Si Δ E-E detectors. Deduced ¹³O resonance energies, J^{π} and Γ using R-matrix analysis.

¹³O Levels

E(level) [‡]	J#‡‡	Г‡	L‡	Comments
2.69×10 ³ 5	1/2+	0.45 MeV 10	0	$\Gamma = \Gamma_p$. See related discussion on ANCs and widths in (2015Mu08, 2017Mu06, 2022Mu07).
3290 50	[1/2 ⁻ ,3/2 ⁻]	75 keV 30	1	E(level): Possible mirror of a shell model predicted $(1/2^-, 3/2^-)$ state in ¹³ B at $E_x \approx 4$ MeV.

[†] From shape of resonance and R-matrix analysis assuming a only a single-proton decay channel. The following three distant resonances were included in the R-matrix analysis to fit the background: 4550, $3/2^-$, $\Gamma=0.24$ MeV; 5000, $3/2^+$, $\Gamma=0.78$ MeV; 5700, 3/2⁺, Γ=2.0 MeV. [‡] From 2007Sk02.