$^{1}H(^{20}C,^{20}C'\gamma)$ 2009El03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. S. Narijauskas, J. H. Kelley, C. G. Sheu	ENSDF	9-June-2017

Beam=^{20}C, Target=Liquid H_2, ^{208}Pb.

2009El03:

XUNDL set compiled by S. Geraedts and B. Singh (McMaster) 2009.

A beam of E=41.4 MeV/nucleon ^{20}C was produced at the RIKEN/RIPS facility by fragmenting 63 MeV/nucleon ^{40}Ar ions on a ^{181} Ta target. The ^{20}C impinged on liquid H_2 and ^{208}Pb targets. The scattered particles were identified using a plastic ΔE-E telescope and ΔE vs. time-of-flight over an 80 cm flight path.

In addition, the authors measured Eγ, Iγ using the 160 NaI(Tl) crystal DALI2 array; the spectra measured on ^{1}H and ^{208}Pb were Doppler shift corrected and compared with shell model calculations using a p-shell proton and sd-shell neutron model space.

Also deduced σ(Pb)=35 mb *8* and $\sigma(^{1}H)$=24 mb *4* at E(^{20}C)= 41.4 MeV/nucleon.

^{20}C Levels

E(level)	J^π	Comments
0	0^+	
1614 *11*	2^+	B(E2)↑<0.00184 (2009El03) Neutron transition probability M_n^2=0.0292 b *52* (2009El03).

γ(^{20}C)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Comments
1614 *11*	1614	2^+	0	0^+	E_γ: from scattering on hydrogen target. Eγ=1631 keV *37* from ^{208}Pb target.

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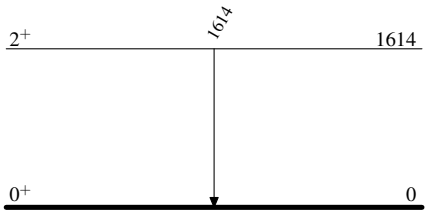
Level Scheme



$^{20}_{6}C_{14}$