^{1}H(^{34}Si,P):from IAR   **2012Im01**

		History		
Type	Author		Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		ENSDF	31-May-2015

From isobaric analog resonances in ^{35}P using (p,p) elastic scattering in inverse kinematics.

2012Im01: E≈5 MeV ^{34}Si beam was produced by projectile fragmentation of a 63 MeV/nucleon ^{40}Ar primary beam and was separated by the RIKEN projectile fragment separator (RIPS). Fragments were identified event-by-event by time-of-flight between the timing timing signals measured by a plastic scintillator and the cyclotron rf signals. The secondary target was a 10.9 *5* mg/cm^2 thick polyethylene film. Scattered protons were detected and identified with ΔE-E telescopes (FWHM=130 keV) of three layers of silicon semiconductor detectors (SSDs) (the first one is double-sided strip detector for ΔE and the other two one-sided for E). Measured σ(Ep,θ). Deduced levels, resonance energies, L-transfer, proton widths, total widths, and spectroscopic factors from R-matrix analysis for isobaric analog resonances (IARs) in ^{35}P.

IARs observed by 2012Im01 in ^{35}P are related to the corresponding β^--decay parent states in ^{35}Si.

^{35}Si Levels

Additional information 1.

E(level)[†]	J$^{\pi}$[‡]	Comments
0	7/2$^-$	E(level): IAR resonance energy in ^{35}P: E$_R$(c.m.)=3006 *2*, corresponding to IAR state in ^{35}P at 15196 *14* (2012Im01).
910	3/2$^-$	E(level): 984 *36* from IAR resonance energy in ^{35}P: E$_R$(c.m.)=3990 *36*, corresponding to IAR state in ^{35}P at 16180 *39* (2012Im01).
974	3/2$^+$	E(level): 803 *18* from IAR resonance energy in ^{35}P: E$_R$(c.m.)=3809 *18*, corresponding to IAR state in ^{35}P at 15999 *23* (2012Im01).
1444?	(1/2$^+$)	E(level): rounded value of 1444 *44* from IAR resonance energy in ^{35}P: E$_R$(c.m.)=4450 *44*, corresponding to possible IAR state in ^{35}P at 16640 *46* (2012Im01).
2168	5/2$^+$	E(level): 2093 *12* from IAR resonance energy in ^{35}P: E$_R$(c.m.)=5099 *12*, corresponding to IAR state in ^{35}P at 17289 *18* (2012Im01).
2194?	(1/2$^-$,3/2$^-$)	E(level): rounded value of 2194 *15* from IAR resonance energy in ^{35}P: E$_R$(c.m.)=5200 *15*, corresponding to possible IAR state in ^{35}P at 17390 *21* (2012Im01).

[†] Rounded values from Adopted Levels, unless otherwise noted. Values deduced from difference of measured IAR resonance energy E$_R$(c.m.) for ^{35}P in 2012Im01 are given as comments, with E$_R$(c.m.)=3006 *2* identified as IAR of ground state of ^{35}Si.

[‡] From R-Matrix fit to measured cross-sections for isobaric analog resonances in ^{35}P (2012Im01).