^{9}Be(^{37}Ca,X) 2024Dr01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Lijie Sun and Jun Chen	NDS 211,1 (2026)	30-Sep-2025

$J^{\pi}=3/2^{+}$ for ^{37}Ca ground state.

2024Dr01: a 72-MeV/nucleon ^{37}Ca secondary beam was produced via the fragmentation of a 140-MeV/nucleon $^{40}Ca^{20+}$ primary beam impinging on a 0.5-mm-thick Be target. Experimental setup includes the CAESium-iodide scintillator ARray (CAESAR) for detecting γ rays, a DSSD-CsI(Tl) ΔE-E Ring Telescope for detecting protons, a Scintillating-Fiber Array (SFA) and the S800 spectrograph for detecting heavy residuals. Measured E_p, Eγ, and E(residual). Deduced the first excited state in ^{35}Ca via the 2p+^{33}Ar exit channel from total decay-energy spectra using the invariant-mass method. Comparisons with shell-model calculations with the USDC Hamiltonian.

^{35}Ca Levels

E(level)	J^{π}	Comments
2.08×10^{3} *10*	$(3/2^{+})$	E(level): From total decay energy of 2p+^{33}Ar E_T=1667 keV *20*. J^{π}: shell-model calculations.