

Adopted Levels

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	P. K. Joshi, B. Singh, S. Singh, A. K. Jain		NDS 138, 1 (2016)	15-Oct-2016

S(n)=10780 SY; S(p)=1260 SY; Q( $\alpha$ )=4230 SY [2012Wa38](#)

Estimated uncertainties ([2012Wa38](#)):  $\Delta S(n)=640$ ,  $\Delta S(p)=590$ ,  $\Delta Q(\alpha)=640$ .

Q( $\epsilon p$ )=10730 540, S(2p)=1010 590 (both from syst, [2012Wa38](#)). S(2n)=24280 (theory, [1997Mo25](#)).

[1999Xu05](#) (also [2005Xu04](#)):  $^{139}\text{Dy}$  produced and identified in  $^{106}\text{Cd}(^{36}\text{Ar},X)$  reaction at E=176 MeV. Measured p- $\gamma_1(x$   
ray)- $\gamma_2(x$  ray)-t; He-jet; totally depleted silicon surface barrier detectors, HPGe detectors.

[2000So11](#):  $^{90}\text{Zr}(^{197}\text{Au},X)$  E=30 MeV/nucleon; measured fragments charge and mass distribution and isotopic production  $\sigma=70 \mu\text{b}$   
for the production of  $^{139}\text{Dy}$ .

[Additional information 1.](#)

 $^{139}\text{Dy}$  LevelsCross Reference (XREF) Flags

**A**  $^{140}\text{Ho}$  p decay (6 ms)

<u>E(level)</u>	<u>J<math>^\pi</math></u>	<u>T<math>_{1/2}</math></u>	<u>XREF</u>	<u>Comments</u>
0	(7/2 <sup>+</sup> )	0.6 s 2	<b>A</b>	$\% \epsilon + \% \beta^+ = 100$ ; $\% \epsilon p \approx 11$ ( <a href="#">2005Xu04</a> ) $J^\pi$ : from comparison of experimental delayed proton spectrum to statistical model calculations ( <a href="#">1999Xu05,2005Xu04</a> ). $T_{1/2}$ : from the decay curve of p-221 $\gamma$ in $^{138}\text{Gd}$ ( <a href="#">1999Xu05,2005Xu04</a> ). $\beta_2 \approx 0.3$ (from comparison of $J^\pi$ to Nilsson diagrams, <a href="#">1999Xu04</a> ). Measured partial reaction cross sections via $\beta^+ p$ decay=160 nb ( <a href="#">1999Xu05</a> ) with a quoted uncertainty of a factor of 2. Observed 221 $\gamma$ and 384 $\gamma$ , assigned to the decay of first 2 <sup>+</sup> and 4 <sup>+</sup> states, respectively in $^{138}\text{Gd}$ ( <a href="#">1999Xu05</a> ).