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$^{89}\text{Y}(\text{p},\text{n}),(\text{p},\text{n}\gamma)$     1967Bl07, 1968Jo01, 1969Li17

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Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, E. A. McCutchan		NDS 165,1 (2020)	1-Mar-2020

1967Bl07: E=4.7-6.5 MeV. Measured  $\sigma(E)$ , BF<sub>3</sub>-counter, scin.

1968Jo01: E=3.6-5.8 MeV. Measured  $\sigma(E)$ , 4 $\pi$  flat-response neutron detector.

1969Li17: E=5.4-7.8 MeV. Measured  $\Sigma(E, E\gamma)$ , semi.

Other: 1995Ka51.

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$^{90}\text{Zr}$  Levels

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E(level) <sup>†</sup>	Comments
13108 <sup>‡</sup> 4	E(level): Probable analog of $^{90}\text{Y}(\text{g.s.})$ . E(p)(lab)=4807 4.
13309 <sup>‡</sup> 4	E(level): Probable analog of $^{90}\text{Y}(203)$ . Not observed in (p,n) to the first excited state in $^{89}\text{Zr}$ (1967Bl07). E(p)(lab)=5010 4.
13940	E(level): Possible analog of $^{90}\text{Y}(777)$ . E(p)(lab)=5645.
14090	E(level): Possible analog of $^{90}\text{Y}(954)$ . E(p)(lab)=5800.
14220	E(level): Possible analog of $^{90}\text{Y}(1048)$ . E(p)(lab)=5930.
14270	E(level): Probable analog of $^{90}\text{Y}(1212)$ . E(p)(lab)=5980.
14310	E(level): E(p)(lab)=6025.
14410	E(level): E(p)(lab)=6120.
14440	E(level): Probable analog of $^{90}\text{Y}(1371)$ . For resonance parameters see 1969Li17. E(p)(lab)=6150.
15510 <sup>#</sup>	E(level): Probable analog of $^{90}\text{Y}(2474)$ . E(p)(lab)=7230.
15690 <sup>#</sup>	E(level): Probable analog of $^{90}\text{Y}(2624)$ . E(p)(lab)=7420.

<sup>†</sup> Calculated from E(p) using S(p)=8353.1 keV /16 (2017Wa10).

<sup>‡</sup> From 1968Jo01. For resonance parameters, see 1968Jo01, 1965Ma20. For angular distribution of neutrons, see 1966Ki08, 1965Ma20.

<sup>#</sup> From 1969Li17.