

^{50}Ni $\varepsilon 2p$ decay 2007Do17

Type	Author	History Citation	Literature Cutoff Date
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Parent: ^{50}Ni : $E=0$; $J^\pi=0^+$; $T_{1/2}=18.5$ ms *I2*; $Q(\varepsilon 2p)=11260$ SY; $\% \varepsilon 2p$ decay >14.0

^{50}Ni - $Q(\varepsilon 2p)$: 11260 536 from $Q(\varepsilon)=14130$ 520 (syst) and $S(2p)(^{50}\text{Co})=2870$ 130 (2021Wa16).

^{50}Ni - $T_{1/2}$: Measured by 2007Do17.

^{50}Ni - $\% \varepsilon 2p$ decay: from intensity of 1972 proton group. Total delayed proton decay branch is 86.7% 39 from time spectrum of events with energy >900 keV in the charged-particle spectrum (2007Do17), most of which is probably associated with one proton decay.

2007Do17: ^{50}Ni source was produced via fragmentation of 74.5 MeV/nucleon ^{58}Ni from SISSI-LISE3 facility of GANIL on a 250 mg/cm² natural Ni target. Fragment were selected by the ALPHA-LISE3 separator by energy loss, residual energy and time-of-flight using two micro-channel plate (MCP) detectors and Si detectors, and were implanted into double-sided silicon-strip detectors (DSSSD) and a thick Si(Li) detector for detecting implanted events, charged particles and β particles. γ rays were detected by four Ge detectors. Measured $E\gamma$, $I\gamma$, $E(p)$, $I(p)$, particle- γ -coin, implant-p time correlation. Deduced parent $T_{1/2}$ and total proton branching ratio.

 ^{48}Mn Levels

E(level)	J^π
0	4^+

Delayed Protons (^{48}Mn)

$E(p)^\dagger$	$E(^{48}\text{Mn})$	$I(p)^\ddagger$	$E(^{49}\text{Fe})$	Comments
1972 13	0	14 5	4835	This is a 2-proton decay. $E(^{49}\text{Fe})$: IAS in ^{50}Co with $J^\pi=0^+$.

† The proton energies are in the center-of-mass system (2007Do17).

‡ Absolute intensity per 100 decays.

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Decay Scheme

I(p) Intensities: I(p) per 100 parent decays

