$^{18}O(\pi^-,\pi^+)$ 1978Se07,1984Gi10

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Kelley, C. G. Sheu	ENSDF	01-May-2017

1978Se07: The mass of ^{18}C was measured using the (π^-,π^+) double-charge-exchange reaction. A beam of 164 MeV negative pions from the LAMPF EPICS facility impinged on a refrigerated 0.90 g/cm^2 94.8% ^{18}O enriched ice target. The outgoing π^+ particles were momentum analyzed using a triple-quadrupole-double-dipole magnetic spectrometer that was calibrated using the $^{12}C(\pi^-,\pi^+)^{12}Be$ reaction. The value Q=−25.69 MeV *15* is deduced for the reaction. The present value for $\Delta M(^{18}O)$=−782.8156 keV *7*, which is consistent with the 1974 value, gives ΔM=24.91 MeV *15*.

1984Gi10: In a follow-up measurement to 1978Se07 at LAMPF, the systematics of $^{18}O(\pi^-,\pi^+)^{18}C_{g.s.}$ and $^{18}O(\pi^+,\pi^-)^{18}Ne_{g.s.}$ reactions are compared using a refrigerated 0.91 g/cm^2 94% ^{18}O enriched ice target. In this case evidence was observed for a state at E_x=1.55 MeV.

See also discussion in 1980Ge09.

^{18}C Levels

E(level)	Comments
0	ΔM=24.91 MeV *15* is deduced.
1.55×10^3	