

$^9\text{Be}(^{18}\text{Ne}, ^{17}\text{Ne})$  2004Ze05

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, G. C. Sheu		ENSDF	16-Jan-2018

2004Ze05: The two-proton decay of excited  $^{17}\text{Ne}$  states was studied by analyzing the decay of states populated in 1-neutron removal reactions from  $^{18}\text{Ne}$ . The 36 MeV/nucleon  $^{18}\text{Ne}$  beam was produced at the GANIL/SISSI- $\alpha$  facility by fragmenting a  $^{24}\text{Mg}$  beam on a  $^{12}\text{C}$  production target. The incident trajectories of  $^{18}\text{Ne}$  ions were traced as they impinged on a 47 mg/cm<sup>2</sup> Be foil placed at the SPEG spectrometer target position. Unbound  $^{17}\text{Ne}$  states decayed by 2-proton emission to  $^{15}\text{O}+2\text{p}$ . The momenta of protons were determined using the eight telescope MUST array, that covered  $\theta_{\text{lab}} \approx 2^\circ - 25^\circ$ . The heavier  $^{15}\text{O}$  recoils were momentum analyzed using the SPEG spectrometer, which was positioned along  $\theta=0^\circ$ . Excitation energies were deduced from analysis of the invariant mass ( $\Delta E \approx 250$  keV). Low statistics prevented an analysis of discrete states. The first excited state is not observed. The 2<sup>nd</sup> and 3<sup>rd</sup> excited states are observed around  $\Delta M=19$  MeV; and their decays are consistent with emission of uncorrelated protons. Groups corresponding to other states with  $\Delta M > 20.2$  MeV are analyzed together; their decay is consistent with emission of correlated protons: (28 9)% sequential and (72 12)%  $^2\text{He}$  decay. See further discussion on 2p correlations in (2004BI19).

 $^{17}\text{Ne}$  Levels

E(level) <sup>†</sup>	Comments
1764	Decay is consistent with isotropic sequential 2-p decay.
1908	Decay is consistent with isotropic sequential 2-p decay.
x	$X \geq 3500$ keV. Decay is consistent with (28 9)% sequential and (72 12)% $^2\text{He}$ emission.

<sup>†</sup> All levels are unresolved.