

Errata for Chapter 17 of Subatomic Physics (3rd edition).

1) On page 534, item 2:

The example with ^{69}Ga is incorrect: 3 protons in the $2p_{3/2}$ sub-shell can only yield $J^\pi = 3/2^-$, as can easily be seen by considering the system as a single hole in the $2p_{3/2}$ sub-shell. A more appropriate example is ^{51}V , with 23 protons and 28 neutrons. Here we can consider 3 protons in the $f_{7/2}$ sub-shell. The orbits allowed by the Pauli principle have $J^\pi = 3/2^-, 5/2^-, 7/2^-, 9/2^-, 11/2^-, 15/2^-$.

However, the ground state has $J^\pi = 7/2^-$, due to the pairing, which couples two of the protons to $J^\pi = 0^+$.

2) On problem 17.19:

“(a) Determine the next shell closures beyond those of $Z = 82$ and $Z = 128$.”
should be replaced by

“(a) Determine the next shell closures beyond those of $Z = 82$ and $Z = 126$.”