

Abstract Submitted
for the DNP10 Meeting of
The American Physical Society

Shell Model Interactions that Conserve Pseudospin Symmetry¹

JOSEPH GINOCCHIO, Los Alamos National Laboratory — Nuclei approximately conserve pseudospin symmetry [1]. Normally shell model interactions are written in terms of spin and orbital angular momentum operators, not in terms of pseudospin and pseudo-orbital angular momentum operators. We determine the shell model interactions which conserve pseudospin symmetry and pseudo-orbital angular momentum symmetry and write them in terms of spin and orbital angular momentum operators including the tensor interaction. We show that, although the tensor interaction by itself does not conserve pseudo-orbital angular momentum, certain combinations of the tensor interaction with the two body spin orbit interaction do conserve pseudo-orbital angular momentum.

[1] J. N. Ginocchio, Physics Reports 414, 165 (2005).

¹This research was supported by the United States Department of Energy under contract W-7405-ENG-36.

Joseph Ginocchio
Los Alamos National Laboratory

Date submitted: 28 Jun 2010

Electronic form version 1.4