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An Isospin Revival for 2008 ARAM MEKJIAN, Rutgers University, LARRY ZAMICK, Rutgers Unviersity — We can make an association of isospin and angular momentum in a single j shell.For 2 particles the interaction in isospin a +b t(1).t(2) is equivlant to c +d(-1)^J where J is the angular momentum of the 2 particles. Considering a system of one proton and 2 neutrons we are able to get a formula that counts the number of states of 3 identical particles in a j shell with J=j. This is at first surprising because for identical partices the above isospin interaction is a constant a+b/4. How can a constant tell us something useful? Using the above isospin interaction we can get a relation invoving the number of isospin T=0 and T=2 states for a system of 2 protons and 2 neutrons.If in the even -even Ti isotopes we constrain the angular momental of the 2 protons and 2 neutrons to be either zero or two. then we find there is no freedom in how much each of these angular momenta is present. This is because of the constraint that the T=0 and T=2 states must be orthogonal. Despite this one gets reasonable results for 46Ti and 48Ti. Isospin consideratios can simplify experessions for the number of pairs of particles of a particular angular momentum.

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