

Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

Isospin Mixing of Quark Cluster States in the Bag Model

THOMAS WARD, Techsource Inc., JOHN RASMUSSEN, University of California at Berkeley, GUY EMERY, Bowdoin College — The isospin mixing of quark cluster dibaryon states interpreted within the multi-quark bag model of Maulders, Aerts and de Swart (MAS) will be studied. Dibaryon resonances composed of color-magnetic quark cluster states are predicted to be strongly isospin mixed via the off-diagonal quark cluster color-magnetic interaction. For example, the isospin mixing of two dibaryon ${}^3P_{0,1,2}$ multiplets identified at 2016- and 2052-MeV are calculated to be strongly mixed. The degeneracy of the two multiplets is completely removed by the off-diagonal interaction whose extracted and calculated strength varies between 60-120 MeV depending on the spin of the multiplet member and reproduces well the identified spectrum of states.

Thomas Ward
Techsource Inc.

Date submitted: 01 Jul 2008

Electronic form version 1.4