

# Evaluated Experimental Isobaric Analog States and the Isobaric Multiplet Mass Equation

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Isobaric Analog States (IAS) of ground state nuclei have been evaluated for the first time as part of the Atomic Mass Evaluation (AME). These states in light- to medium-weight nuclei are of interest for mass modelling and are used to test Wigner's Isobaric Multiplet Mass Equation (IMME) where members of the same multiplet may generally be described by an isospin dependent quadratic equation. Experimental IAS masses have been evaluated for isospin multiplets  $T=1/2$  to  $T=3$  for masses  $A=8$  to  $A=60$  and the corresponding IMME coefficients extracted. These new results lead to a clearer and more precise view of the isospin dependence of nuclear mass for nuclides around  $N=Z$ .

In this presentation, after a short introduction to Isobaric Analog States and the IMME, the basic methods of experimental evaluation will be discussed. The overall tendencies observed for this first complete evaluation will be presented, and the impact on current experimental and theoretical research considered.

Particular attention has been paid to render this subject accessible to students of all ages, but also to provide complete and up-to-date information of interest for both experimentalists and theorists alike.