

4. Conclusions

The anomalous correlation between Γ_n^0 and Γ_γ for ^{138}Ba reported by Musgrove *et al.* (1975) is now seen to have been caused by an incorrectly assessed prompt background correction. The nucleus ^{140}Ce has several resolved-width resonances with small radiative widths and is perhaps the most sensitive indicator of the magnitude and time dependence of the prompt background correction for γ -ray detectors. We have been unable to determine conclusively whether the width correlation predicted by the valence model is present in the ^{138}Ba and ^{140}Ce nuclides. However, certain resonances are expected to decay predominantly via valence neutron transitions.

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