



















#### 4. Conclusions

The anomalous correlation between  $\Gamma_n^0$  and  $\Gamma_\gamma$  for  $^{138}\text{Ba}$  reported by Musgrove *et al.* (1975) is now seen to have been caused by an incorrectly assessed prompt background correction. The nucleus  $^{140}\text{Ce}$  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  $\gamma$ -ray detectors. We have been unable to determine conclusively whether the width correlation predicted by the valence model is present in the  $^{138}\text{Ba}$  and  $^{140}\text{Ce}$  nuclides. However, certain resonances are expected to decay predominantly via valence neutron transitions.

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