

Identification of Vibrational States in $^{230}\text{Th}(n, f)$ Reaction

A.N. Behkami, Z. Kargar and M.N. Nasrabadi

Physics Department, Shiraz University, Shiraz, Iran
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Abstract: The excitation function for the fission of ^{230}Th induced by neutrons has an unusual maximum for neutron energies in the vicinity of 700 keV. It has been suggested that this maximum may be associated with the vibrational-mode resonance states. The unusual peak in the excitation function is interpreted in terms of a vibrational-mode resonance state in a two-humped fission barrier. From theoretical fits to the fission cross sections and angular distributions, it is shown that the resonance has $K=1/2$.

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Key words: fission, excitation function, resonance

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