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The elusive 1st excited state in 229Th PETER MOLLER, ANNA C. HAYES, Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM 87545 — Several different approaches have been proposed and implemented to find the 1st excited state in 229Th which from systematics and other considerations has been postulated to be located just a few eV above the ground state. One possibility is to populate states in 229Th and study the alpha-decays from the gs and isomer to 225Ra and observe the different alpha-decay half-lives and associated decay energies. Another intriguing possibility is to study the beta decay from 229Ac into 229Th and observe the beta-decays to both the isomer and the gs of Th229. We summarize briefly the current experimental status and review the different theoretical issues associated with interpreting the different approaches.

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