Probe of Triple Shape Coexistence in Neutron Deficient Po Nuclei *

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Potential Energy Surface calculations for even-Z nuclei in the vicinity of Z=82 and N=104 predict the co-existence at low excitation energy of configurations possessing markedly different macroscopic shapes. The interplay between these configurations is expected to govern the low-lying structure of these nuclei. In the case of ¹⁹⁰Po, three different 0^+ states, being the bandheads of prolate, oblate and spherical configurations, are predicted by PES calculations performed by Van de Vel *et al.* [1].

Experimental difficulties inherent in the production of light Po isotopes, such as low cross sections and high fission background, mean that the information obtained in in-beam experiments is less complete than for the lighter elements, with Po isotopes of A<190 currently only accessible via α -decay techniques [2]. This has led to alternative interpretations of the data using either the anharmonic vibrator model [3] or the shape coexistence approach [1,4].

In this contribution the results of the recent in-beam spectroscopy study of ^{190,197}Po, performed at the JUROGAM+RITU+GREAT setup at JYFL (Jyväskylä, Finland) will be presented and the implications for the understanding of the low-lying structure of the polonium isotopic chain will be discussed.

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