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Search for Low Spin Collective Structures in 158Er and 159Er

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<p>The nuclei 158,15968Er are classic examples of many phenomena in the study of nuclei at high spin. However, although the multi-quasi particle structures of 158,15968Er are well established, there is not much spectroscopic information on the vibrational structures in 158Er or how these couple to the odd neutron in 159Er. Additionally, there are several bands where the spins and/or parities are not firmly assigned. The relative lack of information at low spins is probably due to a combination of the low spins of the ground states of the nuclei 158,15969Tm that β+/ec decay to 158,15968Er, 2- and 5/2+ respectively.

Two experiments were performed in the AFRODITE spectrometer to populate 158Er and 159Er using 1mg/cm2 150Sm(12C,4n) and 150Sm(13C,4n) reactions respectively at 65MeV, The intention is to study their yrare states below spin 20ħ. Preliminary results will be presented.

A Coulomb excitation of 155Gd with 86Kr ions experiment is scheduled for early May at iThemba LABS. The Physics interest is in looking for collective core excitations of 154Gd that are coupled to the ground state neutron in 155Gd. The outcome of this experiment will be presented as well.

Level (Hons, MSc,
   PhD, other)?

PhD

Consider for a student
   award (Yes / No)?

Yes

Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?

Yes

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