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## Coupling of single neutron configurations to collective core excitations in $^{162}_{70}\text{Yb}$ , the nucleus $^{163}_{70}\text{Yb}$ .

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**Abstract content** <br> &nbsp; (Max 300 words) <br> <a href="http://events.saip.org.za/getFile.py/?target="\_blank">Formatting &lt;br> Special chars</a>

In odd-nuclei the single nucleon can couple to collective excitations of its even-even core nucleus. These collective excitations lie in within the pairing gap and are therefore the lowest energy excitations of the core. Our physics motivation is to search for structures where an odd neutron couples to collective excitations of the  $^{162}\text{Yb}$  core. In addition we will search for high-K structures in this nucleus. The experiment  $^{152}\text{Sm}(^{16}\text{O},n)^{163}\text{Yb}$  at  $E_{\text{lab}} = 93 \text{ MeV}$  was performed to study  $^{163}\text{Yb}$  at iThemba LABS. The gamma-decays from the reaction products have been detected using the AFRODITE gamma-ray spectrometer equipped with eight escape-suppressed clover detectors. This presentation will discuss the preliminary results and analysis of data obtained in the experiment.

**Apply to be considered for a student award (Yes / No)?**

yes

**Level for award (Hons, MSc, PhD, N/A)?**

MSc

**Main supervisor (name and email) and his / her institution**

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

no

**Please indicate whether this abstract may be published online (Yes / No)**

yes

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