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# Nuclear structure studies relevant to double beta decay of 136Xe

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

Presently there is significant interest to experimentally observe neutrinoless double beta  $(0\nu\beta\beta)$  decays. This exotic decay mode, observed in a few isotopes over the nuclear chart, would signify physics beyond the current standard model. A measured  $0\nu\beta\beta$  rate can further be used to determine the effective neutrino mass. A major difficulty in extracting the neutrino mass from the decay rate arises from the uncertainties associated with the matrix element calculated for the decay.

In this talk I present the results from  $\langle sup \rangle 138 \langle sup \rangle Ba(p,t)$  and the  $\langle sup \rangle 138 \langle sup \rangle Ba(d,a)$  transfer reactions performed using a high resolution spectrometer to provide useful spectroscopic information for matrix element calculations in  $\langle sup \rangle 136 \langle sup \rangle Xe \beta\beta$  decay.

#### Apply to be<br> considered for a student <br> &nbsp; award (Yes / No)?

Yes

#### Level for award<br>&nbsp;(Hons, MSc, <br> &nbsp; PhD, N/A)?

PhD

#### Main supervisor (name and email)<br>and his / her institution

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

No

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Yes

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