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The Characterization of the first excited ½⁺ state in ⁹B

Tuesday, 4 July 2017 10:00 (20 minutes)

The ⁹Be - ⁹B isospin doublet carries fundamental significance for both nuclear structure and nuclear astrophysics studies. The first excited ½⁺ state in ⁹Be is already well established. However, its isobaric analogue state in ⁹B has not been unambiguously determined yet. Theoretically, the ⁹B nucleus can either be described using a cluster model with two unbound α particles held together by a covalent proton or using the shell model as a ⁸Be core + proton in the s-d shell. Both theoretical predictions based on different models as well as experimental investigations yield largely discrepant results for the excitation energy of this state.

This presentation describes preliminary results from an experiment performed at iThemba LABS that aimed to characterize the first ½⁺ state in ⁹B with the ⁹Be(³He,t) reaction at the K600 spectrometer.

Apply to be
 considered for a student
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yes

Level for award
 (Hons, MSc,
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MSc

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

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Would you like to <br> submit a short paper <br> for the Conference
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No

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