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Characterisation of the first 1/2+ excited state in ^{9}B through R-matrix analysis

Although the ^{9}Be | ^{9}B isospin doublet has been studied along many years, the observation and prediction of the first 1/2+ state in ^{9}B remains inconclusive. Different reactions have been used, where the experimental values oscillate between 0.80 to 1.90 MeV.

An experiment was proposed to measure the charge exchange reaction of ^{9}Be(^{3}He,t)^{9}B at the K600 spectrometer, iThemba LABS. This experiment combines the high-resolution spectrometer (K600) at 0° and a high efficiency detector array CAKE. Data analysis is performed by reconstruction of the low-lying excitation region in ^{9}B through the momentum-analysis of the tritons, detected at the FOCAL PLANE in coincidence with the detection of the protons by CAKE.

Future work includes R-matrix analysis, required to unambiguously identify the first 1/2+ state in ^{9}B.

Notes

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