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The (d, ^3He) single-nucleon transfer reaction

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The use of single-nucleon transfer reactions can be used to probe nucleon occupancies and vacancies. In heavier nuclei, the presence of high-spin orbitals (e.g. the $g_{9/2}$ and $h_{11/2}$ orbitals) makes these transfer reactions more difficult to carry out. One particular problem relates to the energy requirement for the incident particle used to populate highly excited contributions from these orbitals. The relatively high energy of beams required are not available from tandem accelerators and necessitate the use of a cyclotron. Only two cyclotron facilities worldwide have available the combination of beam energies and magnetic spectrometers for these experiments to be carried out (Grand Raiden at RCNP, Osaka and the K600 at iThemba). The focus of such studies are transfer reactions along isotopic or isotonic chains to test the evolution of the shell model in these cases. The merits of studying the ^{69}Cu nucleus at iThemba LABS will be discussed.

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

No

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

N/A

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

N/A

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

Yes

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