The archetypal one-neutron halo nucleus $^{11}\text{Be}$: controversy resolved.

- Long-standing controversy over the purity of states in $^{11}\text{Be}$ resolved using measurements at different energies.
- Impressive statistics and resolution achieved using a “batch-mode” beam of the long-lived isotope $^{10}\text{Be}$.
- Transfer, elastic and inelastic scattering measured simultaneously to obtain a more complete picture of the reaction.
- Bound, halo states and low-lying resonances populated through a transfer reaction.
- “After … Auton measured these important spectroscopic factors, his results stood for a long time. Then several groups …, came along to muddy the water … lots of nonsense (was) written about $^{11}\text{Be(gs)}$. It is very good to see the return of sanity.” – reviewer Physical Review Letters

Contact: Dr. Kate Jones, University of Tennessee, 865-974-4022, kgrzywac@utk.edu
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Angular distributions of protons emerging from the transfer reaction on a beam of $^{10}\text{Be}$ reveal the nature of the ground state in $^{11}\text{Be}$. The spectroscopic factor (S) extracted here for measurements at four different energies is much more consistent than reported previously.