Nuclear Seminar

Inverse-kinematic studies with the Phoswich Wall and a Germanium array

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Room 124 Nieuwland Science Hall

With the advent of reasonably intense neutron-rich heavy-ion beams inverse-kinematic binary reactions become the workhorse of nuclear structure studies. A novel particle detector array, called the Phoswich Wall, has been built aimed at facilitating such studies (D.G. Sarantites et al., to be published). The Phoswich Wall is a 256-element fast-plastic CsI(Tl) detector that covers a large fraction of the forward hemisphere and that can easily be coupled with a large array of HPGe detectors, specifically Gretina/GRETA and Gammasphere. The measurements to be performed with this setup are based on the detection of coincidences between the target-like fragment of the collision and the γ rays from the projectile-like fragment. Typical target-like fragments are α particles and Li to N nuclei. The presentation will cover a description of the new detector, a (somewhat opinionated) review of recent one-nucleon transfer studies, and a discussion of prospective nuclear-structure studies with the Phoswich Wall focusing on certain neutron-rich mass regions and the corresponding nearby heaviest stable isotopes.

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