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Subject: PhD Position in Experimental Nuclear Astrophysics

The Excellence Cluster Universe and the Technische Universität München (TUM) announces the immediate opening of a PhD position in experimental nuclear astrophysics.

The lifetimes of excited nuclear states, in unstable nuclei lying on the proton-rich side of stability, play a key role in determining thermonuclear (p,γ) reaction rates in novae explosions. One means of measuring such lifetimes is by populating such excited states using charged particle transfer reactions. The present configuration is designed for such types of reaction studies, however, we want to extend the capability of the facility to include transfer reactions where a neutron is in the final reaction channel.

Toward this goal, we have developed a lifetime facility at the Maier-Leibnitz 14 MV tandem accelerator laboratory, and we have obtained a liquid scintillator neutron detector that allows pulse shape discrimination between neutron signals and gamma-ray signals.

The project involves the development of this detector at the Maier-Leibnitz laboratory using reaction studies to characterize its timing resolution properties, using pulsed beam, followed up by a measurement of a nova reaction rate using the developed detector system.

The contract (TVL-E13, 50%) will be of 3 years duration.

Applicants are invited to contact Prof. Shawn Bishop at TUM using the contact information in the side-bar of this announcement.