UNIVERSITY OF NOTRE DAME
DEPARTMENT OF PHYSICS

SPECIAL NUCLEAR SEMINAR

Tuesday, May 17

Exploration beyond the neutron drip line with MoNA-LISA

Dr. Anthony Kuchera
NSCL, MSU

Determining the limits of nuclear existence and understanding the properties of nuclei away from stability are major goals for nuclear physics today. The nuclei that have the largest neutron-to-proton ratio are found beyond the neutron drip-line, where the number of neutrons that can be bound for a given element is exceeded. Even though these nuclei exist for incredibly short times, their properties are able to be measured with detectors such as the Modular Neutron Array (MoNA) and Large multi-Institutional Scintillator Array (LISA) at the National Superconducting Cyclotron Laboratory (NSCL).

The MoNA collaboration has recently extended the measurements to nuclei which emit two neutrons such as ^{10}He, ^{13}Li, ^{16}Be, and ^{26}O. The next challenge is to identify decays by three and four neutrons. Recent results will be presented about a search for three-neutron emission from ^{15}Be. In addition to spectroscopy, MoNA-LISA has also been used for nuclear reaction studies. Details on a recent experiment investigating nucleon-knockout reactions will be discussed.

4 pm – 5 pm

Nuclear Science Laboratory

124 Nieuwland Science Hall

~~~~~

All interested persons are cordially invited to attend

~~~~~

Refreshments will be served prior to the seminar in room 124