

# **Wednesday**

## **Apr. 12<sup>th</sup>**

### **At 3:30pm**



## **Recent Work with the TITAN System and EMMATrap: An Introduction**

### **Abstract:**

The TITAN Penning Trap group at TRIUMF in Vancouver, Canada has recently measured the masses of 18 ground and isomeric states of neutron-rich Cd and In for isotopes approaching the N=82 closed neutron shell. Several of the isomers were measured for the first time and in all cases where isomers were observed they were near a similarly produced ground state as well so well defined, absolute excitation energies were measured from single spectra. We have shown that one of the nuclei,  $^{127}\text{Cd}$  had been previously misidentified in the Atomic Mass Evaluation, which lists the isomer as the ground state. The measurements were all made with High Charged Ions (HCl) in the 13+ charge state and were charge bred in TITAN's Electron Beam Ion Trap (EBIT).

In order to improve the isobaric purity of the species sent to the Penning Trap and assist in future mass measurements. TITAN has installed and is commissioning a new MultiReflection Time-of-Flight mass spectrometer (MR-ToF). Designed to accommodate the space constraints on the TITAN platform, the TITAN couples an radiofrequency quadrupole ion guide and trap with the standard MR-ToF analyzer so direct mass measurements can be performed and mass elective retrapping of species in the analyzer can be accomplished in advance of precision measurements in TITAN's precision Penning Trap.

Finally we introduce a new project, just getting underway at TRIUMF. EMMATrap will be a precision Penning trap experiment designed to couple to the focal plane of TRIUMF's EMMA recoil mass spectrometer. EMMATrap will take advantage of EMMA's ability to separate the higher energy reaction products generated in TRIUMF's ISAC-II facility that TITAN, by virtue of its location in the ISAC-I facility, cannot reach.

## **CYCLOTRON COLLOQUIUM**

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**Dr. Daniel  
Lascar**

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**Post – Doctoral  
Fellow**

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**TRIUMF**

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**CYCLOTRON  
INSTITUTE**

Room 228

Refreshments will be  
served at 3:15pm



**TEXAS A&M  
UNIVERSITY**