

**Tuesday**

**Apr. 3<sup>rd</sup>**

**At 2:30pm**



## **Constraining the Hauser-Feshbach Models for Nucleosynthesis Processes**

### **Abstract:**

Description of the nucleosynthesis processes of elements beyond iron requires several thousands of rates for reactions involving exotic, short lived nuclei. The experimental data for these reactions is limited to nuclei near the valley of stability, and in the case of neutron induced reaction the data is even more scarce. Thus, the network calculations that simulate the nucleosynthesis processes have to rely on Hauser-Feshbach statistical models. Since the predictions of those models vary significantly depending on their input parameters, constraints provided by experiments are of key importance.

This talk will focus on experimental efforts to constrain the HF model predictions. I will discuss two approaches to the problem. The first is a systematic cross section measurement that allow for constraining the HF model input parameters for a region of chart of nuclides. The second option is to measure the HF input parameters, i.e., level density and gamma-strength function, directly and use them to calculate the cross sections. I will discuss the Oslo method that is utilized for this purpose and I will focus on its application to the experimental data from the HYPERION array.

**CYCLOTRON  
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Refreshments will be  
served at 2:15pm



**TEXAS A&M  
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