

**Tuesday**

**Feb. 14<sup>th</sup>**

**At 2:30pm**



## **Open Heavy Flavor Dynamics in the Hot QCD Created in URHICs**

### **Abstract:**

The productions of heavy quarks (HQ) that have a mass quite larger than the temperature reached in ultra-relativistic heavy-ion collisions offer the possibility to have a probe for studying the temperature dependence of the QCD interaction. The observables measured experimentally has significantly challenged the theoretical models toward a self-consistent description of both the HQ nuclear modification factor,  $R_{AA}$  and the collective anisotropies  $v_n$  in their production. We discuss how the temperature dependence of the heavy quark drag coefficient associated to a Boltzmann dynamics can account for a large part of such a puzzle. Furthermore, it turns out that charm quarks may be an ideal probe of the initial strong magnetic field expected to be of about  $10^{19}$  Gauss. Conjointly thanks to their Higgs mass there should be no mixing with the chiral magnetic dynamics. Realistic simulation shows a charm/anti-charm opposite transverse flow at least two order of magnitudes larger than the one of the light hadrons.

## **CYCLOTRON COLLOQUIUM**

---

**Dr. Vincenzo Greco**

---

**Associate Professor**

---

**Nuclear & Theoretical Physics**

---

**University of Catania**

**CYCLOTRON INSTITUTE**

Room 228

Refreshments will be served at 2:15pm



**TEXAS A&M  
UNIVERSITY**