



# PHYSICS AND ASTRONOMY SEMINAR

## **Dr. Norbert Werner**

Eötvös Loránd University

### **“Hot Atmospheres and Black Hole Activity in Massive Galaxies”**

#### Abstract

Most galaxies comparable to or larger than the mass of the Milky Way host hot, X-ray emitting atmospheres affected by stellar and active galactic nucleus (AGN) feedback. I will summarise some of the recent results of X-ray and multi-wavelength observations of galactic atmospheres, including their chemical composition, dynamics, development of thermal instabilities and AGN heating. I will then compare the observed properties of the atmospheric gas in galaxies spanning a wide range of stellar mass and star-formation rate with the predictions of the IllustrisTNG simulations. Finally, I will present new correlations between the atmospheric gas temperatures and the masses of the central supermassive black holes and discuss the results in the light of recent state of the art cosmological simulations.

Tuesday, September 10, 2019

3:30 p.m.

ELL – Room 160