“Modeling the X-ray Emissions from Accreting Black Holes”

Open to the public, free of charge

Monday, October 22, 2018

Refreshments: 3:30 p.m., Bradley Commons, 2202 Everett Tower
Talk: 4 p.m., 1110 Rood Hall

Abstract: In the region close to compact object such as black holes (or neutron stars), the extreme conditions created by the strong gravitational field produces copious amounts of energetic radiation (ultra-violet, X-rays, and Gamma-rays). The interaction of this radiation with the surrounding material results in observables that carry important physical information. X-ray spectral and timing techniques provide direct access to the accretion physics on these systems, such as the black hole spin, the location of the inner-edge of the accretion disk, its ionization stage and composition, among others.

In this talk, I will discuss the development of modern relativistic reflection models and how they can be used for the interpretation of the X-ray spectrum from supermassive black holes in AGN and stellar-mass black holes in binary systems. I will show examples of the implementation of our new models to observational data from several X-ray observatories (e.g., RXTE, Swift, XMM-Newton, Suzaku, and NuSTAR), and discuss current outstanding issues, such as the large iron abundances frequently required to fit the reflection spectra, controversies on the disk truncation, the origin of the soft excess in AGN, and the effects of high density in the observed spectra.

Parking: Metered parking is available in Parking Structure #2, near Miller Auditorium.

More information: (269) 387-4940 Department of Physics email Campus map