



PHYSICS & ASTRONOMY WEEKLY CALENDAR

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WEEKLY CALENDAR

April 12, 2010

Departmental Colloquium

"The Physics of Black Hole Accretion"

3:40 PM, April 15, 2010
109 Nicholson Hall

Chris Reynolds
University of Maryland

Host: Robert Hynes and Juhan Frank

• *Refreshments served at 3:15 PM in 232 (Library) Nicholson Hall* •

For almost the past 20 years, the paradigm for black hole accretion has highlighted the central role of magnetohydrodynamic (MHD) turbulence. However, only in recent years have high-resolution simulations started to explore the subtle nature of MHD turbulent disks. I will discuss results from a series of simulations focusing on geometrically-thin accretion disks. I shall focus on the dynamics of the disk and the transition to the plunging flow close to the black hole, and explain why the low density "corona" of the disk plays a previously unrecognized and important role in shaping the dynamics of the disk. I shall also present a study of the temporal properties of the accretion flow. I shall end by connecting this theoretical work with a new XMM-Newton observation of the Seyfert galaxy 1H0707-495.