

Date: 16:00, April 14th (Thursday), 2016
Place: Room 203, RIBF building 2F, RIKEN

Speaker: Margherita Giustina (SRON)

Title:
Direct Probe of the Inner Accretion Flow around the Supermassive Black Hole in NGC 2617

Abstract:

Active Galactic Nuclei (AGN) are powered by mass accretion onto supermassive black holes (SMBHs) residing at the center of galaxies, and are thought to be the manifestation of the co-evolving phase between SMBHs growth and host galaxy formation. Understanding the physics of AGN is therefore crucial to understand not only the physics of SMBHs, but also the evolution of Cosmic structures as a whole. During the past few years we have collected many evidences for matter outflowing from the vicinity of the SMBHs in AGN. However, surprisingly enough, no corresponding direct evidence for inflow of matter has been found yet. The AGN in the low redshift galaxy NGC 2617 ($z=0.042$) underwent a strong broad-band outburst during 2013/14, concurrently switching from being a Seyfert 1.8 to be a Seyfert 1.0 sometimes during the previous 10 years. I will report about the results of the comprehensive spectral and timing analysis of two deep XMM-Newton observations that revealed striking insights about the very inner accretion flow of this AGN. In particular, persistent Fe K absorption redshifted by $\sim 35,000$ km/s was solidly detected in both observations: a highly ionised mass inflow has started to be traced in NGC 2617, finally providing direct evidence for matter infall toward the central SMBH. The results of the observational campaign will be discussed in terms of both the general AGN structure and the physical characteristics of the inner accretion/ejection flow around SMBHs.