Unveiling obscured accretion: catching AGN feedback in action

Fabrizio Fiore INAF - Osservatorio Astronomico di Roma (Italie))

Understanding how galaxies formed and how they became the complex systems we observe in the local Universe is a major theoretical and observational effort. We know today that the evolution of galaxies cannot be fully constrained without taking into account their central supermassive black holes (SMBHs) and their active phases. Yet,despite much observational effort, the census of accreting SMBH through the cosmic epochs is still incomplete, and feedback mechanism between the AGN and its host galaxy remain little constrained. I will discuss recent findings on both topics.

A large number of heavily obscured, Compton-thick (CT) AGN is predicted by AGN synthesis models for the CXB and by the "relic" SMBH mass function measured from local bulges. However, even the deepest X-ray surveys are inefficient to directly detect these elusive AGN. Alternative selection criteria, combining mid-IR, near-IR and optical photometry with an X-ray stacking analysis have instead been successful to pin-point large populations of CT AGN at z=1-3, thus completing the SMBH census in this redshift range.

The compilation of an unbiased fraction of obscured AGN is a step toward the understanding of AGN feedback on their host galaxies. In fact, this fraction can be viewed as a measure of the timescale over which AGN feedback is at work. By measuring the fraction of obscured AGN (including CT objects) as a function of both luminosity and redshift it will be possible to constrain feedback mechanisms in small and large mass host galaxies, and over the cosmic time.

Ce séminaire aura lieu au CEA Saclay Orme des Merisiers bâtiment 709, Salle 220.