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Unveiling the intrinsic AGN strength in a 12 micron-selected Seyfert 2 sample

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The ability of the X-rays to penetrate and measure large columns of obscuring material is crucial to characterise the emission from the Active Galactic Nuclei (AGN), especially those with heavy obscuration and/or weak emission.
In this work we exploit the largest energy band available in the X-rays (∼0.5-30 keV) to accurately assess the intrinsic power and obscuration for a sample of 30 local Seyferts 2, selected from the 12μm galaxy sample (12MGS; Rush, Malkan & Spinoglio 1993).
Coupling the information from the systematic study of the X-ray properties of the proposed sample with the accurate SED decomposition by Gruppioni et al. (2016), which provides a complete characterisation of the source properties, from the small scales (L_{bol}, i.e. the accretion power of the AGN) to the kpc-scales ($M_\star$ and SFR), we obtain a comprehensive picture of the contribution of the AGN in an almost complete Seyfert 2 sample from the 12MGS.
We present i) the first accurate determination of the intrinsic power (L_X) and the column density (N_H) of the obscuring material for the proposed objects; ii) the comparison of the column density (N_H) obtained from the obscuration in the X-rays with that derived from the SED decomposition, parametrised by the optical dept (τ) associated to the 9.7μm absorption feature; iii) for the objects with available interferometric observations of CO emission, assuming a suitable α_{CO} conversion factor, we estimate the host galaxy gas content in order to assess whether the host galaxy contributes in hiding the nucleus.

Topic

Active Galactic Nuclei: accretion physics and evolution across cosmic time

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