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Spectral atlas of the XMM-CDFS deep survey

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XMM-Newton observed the Chandra Deep Field South (CDFS) with a ~3 Ms exposure time. EPIC spectra of bright 185 sources, practically all AGN with redshift up to z=3.8 , are compiled and their basic properties are studied by conventional spectral fitting, as well as an exploratory analysis with two, rest-frame X-ray colours and the Fe K line strength indicator and rest-frame spectral stacking. A significant proportion of the sample shows X-ray absorption, as expected. The nH distribution agrees with that has been found in various X-ray surveys. We find a Compton thick AGN fraction to be ~4%. Obscured AGN fraction shows a clear evolution and we attribute it to increasing gas content in galaxies towards high redshift. For unobscured AGN, broad Fe K line detection rate is ~30% in the brightest 21 subsample. The anti-correlation between the narrow Fe K EW and Lx (or the Iwasawa-Taniguchi effect) found in nearby AGN is not present in the XMM-CDFS unobscured AGN. However, this is probably due to a combination of the Lx-z bias and the evolution of the galaxy gas content suggested above.

Topic

Active Galactic Nuclei: accretion physics and evolution across cosmic time

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