

Abstract Submitted
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Hard X-ray Emission from AGN and the Cosmic X-ray Background (CXB) VOLKER BECKMANN, ISDC and NASA/GSFC, NEIL GEHRELS, NASA/GSFC, SIMONA SOLDI, INTEGRAL Science Data Centre, INTEGRAL COLLABORATION — The CXB is believed to be caused by unresolved X-ray sources, and peaks around 30 keV. While the CXB below 20 keV is well understood, no all-sky survey has been available at the peak of the CXB before the INTEGRAL mission. Up to now more than 130 AGN have been detected by INTEGRAL above 20 keV. INTEGRAL can contribute to our understanding of the AGN phenomenon mainly in two ways. By deriving high signal to noise spectra up to several hundred keV to study the physical processes involved in this energy range, such as Compton reflection. And by looking at the statistical properties of AGN seen by INTEGRAL, one can study the contribution to the CXB and the role of heavily absorbed type II AGNs. We have compiled a complete extragalactic sample based on $\sim 25,000$ square degrees in the 20-40 keV band with INTEGRAL and present the first luminosity function of AGN in this energy range. The objects explaining the peak in the cosmic X-ray background are likely to be either low luminosity AGN ($L_X < 10^{41}$ ergs s $^{-1}$) or of other type, such as intermediate mass black holes, clusters, and star forming regions. An alternative scenario is an evolution of the source population, with an increasing fraction of absorbed sources with redshift.

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