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Applications of the Insight-HXMT data

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The main methods applied to study X-ray binaries are timing and spectral analysis. Compared to other instruments, Insight-HXMT covers a broad energy band from 1 to 250 keV with a high time resolution and a moderate spectral resolution. Moreover, Insight-HXMT does not suffer from strong pileup effects and instrumental dead time. We have taken these advantages of Insight-HXMT to study two black hole transients, MAXI J1820+070 and EXO 1846-031. In the former case, we found that the hard lags, with a timescale of tens of milliseconds, are significantly correlated to the photon index, suggesting the lags originate from Comptonization in a jet. In the latter case, together with the NuSTAR data, we observed a variable ionized disk wind, appearing in the hard-intermediate state and disappearing in the soft state. More details will be present in the talk.

Topic

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