

The broad-band X-ray power spectrum in black hole binaries: from months to milliseconds

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ABSTRACT

The X-ray emission from black hole binaries shows variability on timescales from milliseconds to years. While the power spectrum has been well characterised above ~ 0.01 Hz for a number of sources, the frequency range below 10^{-5} Hz is much less studied. The monitoring capabilities of MAXI make it a unique tool in such studies. Combined with RXTE observations, we compare the low and high frequency power spectrum in hard and soft states of bright sources such as GX 339–4 and Cygnus X-1. We find the broad-band variability to be more stable across states at low frequencies, and discuss our results in the context of propagating fluctuation models.