The black hole X-ray binary is an accreting system consists of a stellar-mass black hole and a mass losing companion star. The materials from the companion star (donor star) form an accretion disk around the black hole (accretor) due to its viscosity and angular momentum. The accreting materials release its gravitational energy and result in X-ray radiation emitted from inner part of accretion disk.

The quasi-periodic oscillation (QPO) is the period-varying phenomenon in the black hole X-ray binary. When the X-ray light curve contains pulsations in a range of frequencies, a broad peak appears in the Fourier power spectrum. This kind of spectrum indicates that the frequency of a signal changes with time, or, the multiple signals contribute the broad peak. In order to reveal the nature of the quasi periodicity, one must use time-frequency technique to analyze QPO. The black hole X-ray binary is an accreting system consists of a stellar-mass black hole and a mass losing companion star. The materials from the companion star (donor star) form an accretion disk around the black hole (accretor) due to its viscosity and angular momentum. The accreting materials release its gravitational energy and result in X-ray radiation emitted from inner part of accretion disk.

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