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Unveil the jet emissions in XRBs with Insight-HXMT joint observations

Currently a sample of 5 microquasars are reported by LHASSO to have ultrahigh-energies (UHE, above 100TeV) emissions which remains a puzzle for the mechanism underneath. Among this sample, evidences of jet-dominated X-ray emissions were revealed from MAXI J1820+070 during an outburst well observed by Insight-HXMT. Here we report similar properties found in Swift J1727.8–1613 from the joint Insight-HXMT observations, and Swift J1727.8–1613 may end up with the first sample to bridge the MAXI J1820+070 to the majority of other XRBs due to its peculiar correlation between the spectral index and the reflection fraction. Accordingly, an overall framework is likely built that the hard X-ray emissions of black hole XRBs are balanced between flat-hot inner flow (e.g. corona) and jet. In such a scenario, Swift J 1727.8-1613 serves as a possible candidate for LHASSO UHE XRB system, while the majority of other BHXRBS are also microquasars but with jets too weak to be detectable as LHASSO UHE systems.

Contribution

Oral talk

Affiliation

Institute of High Energy Physics, CAS, Beijing, China

E-mail

szhang@mail.ihep.ac.cn

Author: ZHANG, SHU (INSTITUTE OF HIGH ENERGY PHYSICS)

Presenter: ZHANG, SHU (INSTITUTE OF HIGH ENERGY PHYSICS)

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