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Current Challenges and New Frontiers in the Next Decade

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Burst probe to XRB accretion and Insight-HXMT observation

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Although corona has been being well used in modelling accretion of XRBs, especially on aspects of the spectral state transitions and correlation with launching of a jet, so far its nature is still less known, especially on aspect of the formation mechanism. To probe this puzzle observationally, one has firstly to have a proper probe like the intense short soft X-ray shower, since the corona is in definition less emissive and can only be lighted up with the incident soft X-rays. This probe, however, falls short in BH XRBs, but fits well the thermal nuclear flashes occurring on the NS surface. We therefore took the type-I burst to probe the accompanied disk/corona evolution and obtained an atoll sample which shows that corona can be cooled off by the burst shower. Further studies suggest that, a variety of issues apart from corona can be addressed as well by taking this probe. The current shortage in observations at hard X-rays is the relatively poor statistics of the data, which can be diminished by the HXMT mission.

Topic

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