



Contribution ID: 137

Type: **Invited talk**

Relativistic jets from black hole X-ray binaries: an observational review

Black hole X-ray binaries (BH XRBs) exhibit relativistic jets whose properties evolve with the accretion state. Compact jets, causally connected to the accretion flow, are observed during the hard state and are absent during the soft state, while discrete ejecta are launched during hard-to-soft state transitions. The physical mechanisms driving jet formation, quenching, and ejection remain poorly understood. In this talk, focused on recent observations primarily at radio wavelengths, I will review some of the most interesting results obtained over the past few years concerning both types of jets launched from BH XRBs. More in detail, I will discuss our current efforts for understanding the jet coupling to the accretion flow, variability timescales, launching conditions and interactions with the ambient medium, emphasizing results from high-resolution imaging and coordinated multi-wavelength campaigns.

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Session Classification: Jets (Observation, theory and modelling)

Track Classification: Invited talk