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# Constraining the relativistic jets in the black hole X-ray binary MAXI J1836-194 with broadband spectral modelling

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## Abstract

There is a universal connection between the accretion and ejection phenomena that are observed in black holes across the mass scale. Multi-frequency observations of X-ray binaries in outburst are critical to understanding this relationship, with the extensive coverage offering the chance to reveal how jets respond in real time to changes in the accretion flow. In this talk, I will present the early results from multi-zone jet modelling of the black hole X-ray binary MAXI J1836-194 during its 2011 outburst. These observations provided the most comprehensive observations to date of a compact X-ray binary jet during outburst, showing the evolution of the accretion properties as the broadband jet spectrum changed, in particular the jet spectral break, the size and location of the particle accelerating region, and, in one epoch, the location of the high-energy synchrotron cooling break. I will discuss how these data can be modelled with a physically-motivated outflow-dominated model and compared to new relativistic MHD jet models.

**Keywords:** black holes, X, ray binary, jets, accretion

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