

Black hole jet Lorentz factors across the mass range

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Jets from stellar mass black holes in X-ray binaries (XRBs) and supermassive black holes in active galactic nuclei (AGN) provide distinct opportunities to study the jets of black holes across two different mass regimes with very different selection effects. Historically, the apparent speeds of XRB jets have been observed to be lower than those of AGN, leading to the assumption that stellar mass BHs produce slower jets. We employ novel modelling techniques such as nested sampling and simulation-based inference to obtain credible posteriors for the Lorentz factor parent populations of both samples. Both are best described by a power law distribution $N(\Gamma) \propto N^b$. Comparing these samples can give insights into fundamental scaling relations across eight orders of magnitude in black hole mass and further our understanding of jet physics.

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