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Discovery of subsecond jet variability in an accreting neutron star

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We present the discovery of sub-second X-ray/IR correlated variability in the accreting neutron star (NS) 4U 1728-34. The source was observed with simultaneous high time resolution XMM and HAWKI@VLT in February 2019. Data show a strongly correlated signal with a lag shorter than 0.125 s. Such behaviour is well known in black-hole transients, where fluctuations travel from the accretion inflow to an IR emitting jet with a lag of 0.1s. Given that observations were taken during the hard state (i.e. when the jet is active), this result points towards a common jet mechanism for BH and NS. We discuss the physical implications of this discovery and the future perspectives of multiwavelength variability in accreting NS.

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