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Spectral-Timing of Aquila X-1 PETER BULT, NASA/GSFC — Accretion discs around neutron stars are bright in X-rays. This emission has long been known to vary with energy, revealing the material composition of the disc. But also to vary the with a multitude of periods, revealing geometric structures in the disc. Understanding how, exactly, these spectral and temporal signatures couple is crucial for understanding the dynamics of the accretion process through extremely curved space-time. Providing excellent spectral and timing capabilities, NICER is well suited for this task.

Using NICER observations of Aquila X-1 we find, for the first time in a neutron star system, that instabilities in the accretion disc have a two-component spectrum, with the low energy variability driving leading the correlated signals at higher energies. This contribution presents these new results, and their implications for the accretion process in neutron star and black hole systems.

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