

Ultra-luminous X-ray pulsars

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For many years the main competing models for ultra-luminous X-ray sources (ULXs) were intermediate-mass black holes and stellar-mass black holes accreting at super-Eddington. Three years ago the discovery of coherent pulsations in M82 X-1 [1] proved that some (or maybe even most) ULXs are in fact neutron stars. Two more ULX-pulsars were discovered during last year [2–4]. These sources exceed the standard Eddington limit by a factor up to 500. In this talk, I will review the observational advances as well as theoretical models that were put forwards to explain huge observed luminosities.

References

- [1] M. Bachetti et al., *Nature* 514, 202 (2014)
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- [3] G. L. Israel et al., *Science* 355, 817 (2017)
- [4] F. Fürst et al., *ApJL* 831, L14 (2016)

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