

The cross-spectrum in time-series analysis: 1E 1740.7–2942

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1E 1740.7–2942 is a black hole candidate, believed to be part of a high-mass X-ray binary system. This object has been monitored for over 10 years by the wide-field hard X-ray instruments on board the Swift and INTEGRAL satellites. In this work, in possession of this data, we show an application of the cross-spectrum technique to improve the reliability of detecting signals that otherwise are less conspicuous in the individual light curves. The scientific results were presented in Stecchini et al. (2017), and, herein, we show the mathematical background for the method in more detail.

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References

Stecchini, P. E, Castro, M., Jablonski, F., DAmico, F., and Braga, J. 2017, ApJL, 843, L10