

Infinite-duration Continuous Gravitational Waves from neutron stars in binary systems

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The gravitational-wave astronomy field has been resolutely founded seven years ago, thanks to the first direct detection of transient gravitational waves from the collision of two black holes.

The first detection of continuous gravitational waves from fastly rotating neutron stars, either isolated or in binary systems, has yet to be done, and it may be around the corner, representing a further revolutionary big discovery.

The search for this kind of signals, which is among the most interesting targets of the Advanced LIGO-Virgo-KAGRA detectors is challenging due to their expected weakness, and can be very computationally expensive especially when the source parameters are not well constrained, and especially for sources in binary systems. In this talk I will present the methodologies used in CW searches from neutron stars in binary systems, and recent results from the latest advanced LIGO-Virgo-KAGRA observational runs.

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