

Targeted search for continuous gravitational waves from pulsars in binary systems in O3: a semi-coherent approach

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The detection of continuous gravitational wave emission from a neutron star in a binary system is challenging for present and future LIGO-VIRGO-KAGRA searches. The motivation is the accurate modelling of the phase that depends on the binary orbital parameters. Indeed, even when the parameters are known within some uncertainties, search strategies are usually computationally prohibitive due to the necessity of exploring a large parameter space.

In this poster, I will present a new semi-coherent method that, given an ephemeris with uncertainties on binary orbital parameters, can detect the GW signal efficiently in a feasible computational time.

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