

Abstract Submitted
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Loosely coherent searches for continuous gravitational waves
VLADIMIR DERGACHEV, California Institute of Technology — Isolated rotating neutron stars are expected to emit gravitational radiation of nearly constant frequency and amplitude. Searches for such radiation from unknown stars are computationally limited, with recent results from an all sky search achieving sensitivity to strains as small as $1e-24$. We present a new “Loosely Coherent” algorithm which shows a 10x gain in efficiency over previously available programs. We will discuss future applications of loosely coherent searches to exploring extended regions on the sky, with sensitivity comparable to long-duration strictly coherent algorithms.

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