

Abstract Submitted
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Directional searches for persistent gravitational waves ERIC THRANE, STEPHAN BALLMER, LIGO Caltech, JOSEPH D. ROMANO, The University of Texas at Brownsville, SANJIT MITRA, Jet Propulsion Laboratory and LIGO, Caltech; Observatoire de la Cote d'Azur, DINPONGKAR TALUKDER, SUKANTA BOSE, Washington State University, VUK MANDIC, University of Minnesota — A stochastic gravitational-wave background can arise from a wide variety of processes including inflation, cosmic strings, phase transitions in the early universe, pre-Big-Bang models and the superposition of astrophysical sources such as gamma-ray bursts. In addition to this background, the gravitational-wave sky may include a significant foreground from nearby point-like sources. In general, the angular distribution of gravitational-wave power is not strongly constrained. We thus propose a novel framework for directional analysis of persistent (non-bursting) and unmodeled gravitational waves with a network of interferometers, which allows for arbitrary angular distributions of gravitational-wave power.

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