

Abstract Submitted  
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**Searching for a stochastic gravitational-wave background from a population of neutron stars in the Virgo cluster with data from the LIGO and Virgo detectors** DIPONGKAR TALUKDER, University of Oregon, LIGO SCIENTIFIC COLLABORATION, VIRGO COLLABORATION — We describe an in-progress search with LIGO and Virgo data for a stochastic gravitational-wave background (SGWB) from the population of rotating non-axisymmetric neutron stars in the Virgo cluster. Employing multi-baseline radiometry, bounds on the GW strain power from the Virgo cluster can be obtained, which, in turn, can constrain neutron star equations of state. The current status of the search will be presented. We also assess (a) the expected performance of this search using forthcoming second-generation detectors, including the improvement from locating one of the advanced LIGO detectors in India and (b) the reach of third generation detectors to astrophysical SGWBs.

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