

Abstract Submitted
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Constraining models of Population III stars using gravitational-wave observations TANNER PRESTEGARD, VUK MANDIC, KEITH OLIVE, Univ of Minn - Minneapolis, ELISABETH VANGIONI, Institut d'Astrophysique de Paris — A stochastic gravitational-wave background arises from the superposition of many incoherent sources of gravitational waves, which may be cosmological or astrophysical in origin. Recent searches for the stochastic background using LIGO and Virgo data have placed upper limits on the energy density spectrum. Here, we present a method for using measurements of the stochastic background to constrain the parameters of theoretical models, focusing on a background produced by the core-collapse of Population III stars. Finally, we discuss what can be achieved with future generations of gravitational-wave detectors, including Advanced LIGO and the Einstein Telescope.

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