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## Searching for the Stochastic Gravitational-Wave Background with Ground-Based Detectors

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As of today, the Advanced LIGO and Virgo gravitational-wave (GW) detectors have cataloged nearly 100 GW detections from various compact object mergers. These discoveries began the endeavors to search for other kinds of GW sources. Among these, the Stochastic Gravitational-Wave Background (SGWB), arising as the superposition of individually undetectable cosmological and/or astrophysical sources, is one of the potential sources to observe with the network of ground-based GW observatories in the coming years. A cosmologically produced SGWB would carry unique signatures from the earliest epochs in the evolution of the Universe. Likewise, an astrophysical background would provide information about the astrophysical sources that generated it. To a first approximation, the SGWB is assumed to be isotropic; one could determine its statistical properties by observing any part of the sky. However, these backgrounds can be anisotropic as well. Therefore, searches for both isotropic and anisotropic SGWB have been conducted. In this overview talk, I will explain the search methods and the results from the most up-to-date quests for the SGWB using the LIGO-Virgo-KAGRA third observing run. In addition, I will outline the new analysis and searches planned for the upcoming runs of these detectors and the exciting results expected from these probes.

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