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Broadband Searches for Continuous-Wave Gravitation Radiation with LIGO VLADIMIR DERGACHEV, California Institute of Technology, LIGO/VIRGO SCIENTIFIC COLLABORATION — Isolated rotating neutron stars are expected to emit gravitational radiation of nearly constant frequency and amplitude. Searches for such continuous waves (CW) are under way in data collected by the LIGO and Virgo Detectors over the last several years. Because CW signal amplitudes are thought to be extremely weak, long time integrations must be carried out to detect a signal. Integration is complicated by the motion of the Earth (daily rotation and orbital motion) which induces substantial modulations of detected frequency and amplitude that are highly dependent on source location. Large volumes of acquired data make this search computationally difficult. We will present the PowerFlux and "Loosely coherent" analysis pipelines, which account for these modulations, and discuss robustness to deviations from the ideal model of a monochromatic source. Results using data from the S5 run will be shown as well.

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