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Using Gravitational Wave Pulsar Observations to measure electron column density SHANE LARSON, Utah State University, SETH TAMPANO, CGWP, Penn State — For binaries whose sky position, orientation, and chirp mass \mathcal{M}_c are known, the observed gravitational wave amplitude of the binary system is a direct measure of the distance to the binary. In a similar spirit, the distance to radio pulsars can be inferred from pulsar observations from the dispersion measure, the integrated column density of electrons along the line of sight to a pulsar that causes an observational broadening of a radio pulse. This talk considers a multi-messenger observation of galactic binary systems that contain a pulsar component detectable in the electromagnetic spectrum, and a detectable gravitational wave signal, and demonstrates how the two independent distance measures can be used to measure the electron column density along the line of sight to the pulsar.

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