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Gravitational Wave Calibration Error for Supernovae Core Collapse BRAD RATTO, ERAU SN LIGO Group — In order to detect Gravitational Waves (GWs), laser interferometers measure microscopic deformations in space-time caused by transient GWs. However, it is important to realize that interferometers, like any measurement device, introduce distortion in the recorded signals. The recorded signal is a convolution of the laser intensity with a calibration function, where the calibration function contains amplitude and phase errors at every frequency. The maximum amplitude of these errors is documented, but the relationship between the phase and amplitude errors of neighboring frequencies is not well understood. In order to understand this relationship, a plugin in coherent Wave Burst (cWB), a data analysis tool, was developed that allows for frequency and detector dependent calibration errors to be injected into simulated waveforms. This presentation aims to study the impact of this relationship for GWs from core-collapse supernovae (CCSN) and establish realistic correlations of phase calibration errors with frequency.

Brad Ratto
ERAU SN LIGO Group

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