中華民國天文學會
The Astronomical Society of the Republic of China (Taiwan)

Contribution ID: **71** Type: **Oral**

Investigating Relations Between Denoised GW Structures and the Performance of ML-based GW Analysis

Saturday, May 17, 2025 5:00 PM (15 minutes)

We investigated the relationship between the GW denoiser's signal recovery and the prediction of the ML-based CBC analysis by training BBH, NSBH, and BNS binary classifiers on denoised strain data. We found that the GW detector can make confident detections when the signal recovery, measured by overlap, is larger than 0.2 for BBH, NSBH, and 0.1 for BNS. The results are consistent with our statements in the previous work. We also trained several regressors to investigate the relationship between the signal recovery and the parameter estimation results. Our work provides new insight into evaluating and developing future GW denoisers.

Section

Cosmology

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Session Classification: Gravitational waves