Contribution ID : **9** Type : **not specified**

Modeling and prediction of the foreground noise in space-based gravitational wave detections

The Galactic foreground noise presents a major challenge for space-based gravitational wave detection. Gravitational waves from the vast population of double white dwarfs overlap and interfere, producing an indistinguishable foreground component. This contamination complicates the search for other gravitational wave sources and reduces their signal-to-noise ratios. Since the foreground is essentially composed of numerous quasi-monochromatic signals, we exploit their stability by modeling the waveforms into three orthogonal basis-vector components. In the short term, multiple waveforms with similar frequencies can be coherently represented by these three orthogonal components, which can then be used to predict the subsequent waveform evolution. This approach provides an effective strategy for modeling and mitigating the Galactic foreground noise.

Primary author(s) : Dr GAO, Pin (University of Chinese Academy of Sciences)

Co-author(s) : Prof. HUANG, Da (The University of Chinese Academy of Sciences)

Presenter(s) : Dr GAO, Pin (University of Chinese Academy of Sciences)