Contribution ID: **120** Type: **Talk in a parallel session**

Bayesian parameter estimation of continuous gravitational waves from known pulsars

Thursday, 11 July 2024 15:55 (18 minutes)

Continuous gravitational wave (CW) searches targeted at known pulsars utilize electromagnetic observations of the sources to infer the phase-evolution parameters of the gravitational wave signal. We present a new method to perform Bayesian estimation of the amplitude parameters of a CW signal. The method leverages the well-established CW detection statistic, the F-statistic, and modern stochastic samplers to build Bayesian posteriors of the unknown signal parameters. After testing the method, we apply it on putative gravitational wave signals from PSR J1526-2744, a recently-discovered milli-second pulsar.

Primary author: ASHOK, Anjana (Max Planck Institute for Gravitational Physics (AEI), Hannover)

Co-authors: Prof. ALESSANDRA PAPA, Maria (Max Planck Institute for Gravitational Physics); Dr COVAS VIDAL, Pep (Max Planck Institute for Gravitational Physics); Dr PRIX, Reinhard (Max Planck Institute for Gravitational Physics)

Presenter: ASHOK, Anjana (Max Planck Institute for Gravitational Physics (AEI), Hannover)

Session Classification: Multi-messenger astronomy with gravitational waves

Track Classification: Multimessenger Astrophysics (MA): Multi-messenger astronomy with gravitational waves