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Constraining Astrophysical Observables using Gravitational Wave Background

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Pulsar Timing Array (PTA) is close to detecting Gravitational Wave Background (GWB) in the frequency range of nHz to μ Hz. We present an extended analytic model to describe the characteristic spectrum of the GWB using the merger rate of supermassive black hole binary (SMBHB) in the Universe. Astrophysical observables (Galaxy stellar mass function (GSMF), pair fraction, merger timescale and mass relation of supermassive black hole with host galaxy) are used to develop this model. We constrain these astrophysical observables with the help of observational priors and predicted range of GWB. <https://academic.oup.com/mnras/article/531/1/1931/7667924>

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Classification de Session: Contributed talks