

Abstract Submitted
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NANOGrav limits on the isotropic stochastic gravitational wave background from the nine-year data release JUSTIN ELLIS, RUTGER VAN HAASTEREN, Jet Propulsion Lab, NANOGrAV COLLABORATION — Pulsar timing arrays (PTAs) offer a unique opportunity to detect low frequency gravitational waves (GWs) in the near future. In this frequency band, the expected source of GWs are Supermassive Black Hole Binaries (SMBHBs) and they will most likely form in an ensemble creating a stochastic GW background with the possibility of a few nearby/massive sources that will be individually resolvable. In this talk we will present preliminary upper limits on the strength of the isotropic stochastic background of gravitational waves using the new 9-year North American NanoHertz Observatory for Gravitational Waves (NANOGrav) data release. We will also discuss the astrophysical implications of these limits and will conclude with some predictions of our future sensitivity to the stochastic GW background.

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