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Abstract for an Invited Paper
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Detecting stochastic backgrounds of gravitational waves with pulsar timing arrays¹

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For the past decade the North American Nanohertz Observatory for Gravitational Waves (NANOGrav) has been using the Green Bank Telescope and the Arecibo Observatory to monitor millisecond pulsars. NANOGrav, along with two other international collaborations, the European Pulsar Timing Array and the Parkes Pulsar Timing Array in Australia, form a consortium of consortia: the International Pulsar Timing Array (IPTA). The goal of the IPTA is to directly detect low-frequency gravitational waves which cause small changes to the times of arrival of radio pulses from millisecond pulsars. In this talk I will discuss the work of NANOGrav and the IPTA, as well as our sensitivity to stochastic backgrounds of gravitational waves. I will show that a detection of the background produced by supermassive black hole binaries is possible by the end of the decade.

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