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Comparing Single-Source Statistics for Pulsar Timing Array Observing Strategies[1] JEFFREY HAZBOUN, University of Washington, Bothell, JOSEPH ROMANO, Texas Tech University, NANOGRAV NSF PHYSICS FRONTIERS CENTER COLLABORATION — With the recent detection of a common, low frequency signal in the NANOGrav 12.5-year data set, pulsar timing arrays are moving closer toward a significant detection of a stochastic gravitational background from supermassive binary black holes. Once the stochastic background is observed, it is expected that the first detections of single sources will happen shortly thereafter. These sources will allow for long-lived monitoring of continuous gravitational waves, and may provide unprecedented multimessenger information about active galactic nuclei. The time is now to decide on pulsar observing strategies focused on detecting these sources. The use of sensitivity curves allows an efficient way to develop and compare the multitude of observing strategies available to PTAs. Here we compare the various statistics that exist in the literature for continuous sources and discuss their use in constructing sensitivity curves for existing and proposed PTA observational strategies.

[1]NSF NANOGrav Physics Frontiers Center

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