IPTA Data Release 2:
Preliminary Limits on a Stochastic Background of GWs from SMBH Binaries

Paul T. Baker (West Virginia University), for the International Pulsar Timing Array

The International Pulsar Timing Array (IPTA) combines data contributed by its members to search for nanohertz gravitational waves. The IPTA will make its next public data release (DR2) in the near future, containing data from the European Pulsar Timing Array (EPTA), the Parkes Pulsar Timing Array (PPTA), and the North American Nanohertz Observatory for Gravitational Waves (NANOGrav). We analyzed IPTA DR2 for a stochastic gravitational wave background (GWB). Our analysis used the latest techniques in PTA data analysis, simultaneously fitting the GWB and many noise processes such as dispersion measure variations and solar system ephemeris uncertainty, using the `enterprise` software toolkit. Finding no GWB, we present a preliminary upper limit on the amplitude of a GWB. We compare the IPTA DR2 limit to limits set using the same analysis techniques on the three subsets of data contributed by individual PTAs.