



Royal
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European Pulsar Timing Array - Group Achievement Award (A)

The European Pulsar Timing Array (EPTA) is a wide-ranging collaboration involving astronomers and experts in gravitational waves from more than ten institutions across Europe and collects and analyses pulsar timing data from six of the most sensitive radio telescopes in the world. Together with its Indian counterpart InPTA, the EPTA forms one of several pulsar timing arrays currently in operation and aims to observe very low frequency gravitational waves in the 1-100 nHz range through precision timing of very stable millisecond pulsars over extremely long periods of time (more than 10 years). Precision timing of signals from pulsars in different parts of the Milky Way effectively forms a gravitational wave detector with a baseline the size of the Galaxy.

In 2023, the EPTA published their second major data release containing high-precision pulsar timing data from 25 ultra-stable millisecond pulsars among the few dozen that are regularly monitored over a 25-year period, extending the previous dataset released in 2021 and improving the determination of crucial parameters. A series of papers published since the data release present evidence for the detection of gravitational waves from inspiralling supermassive black holes and investigate other possible sources. The datasets and associated code have been made available to other researchers through the EPTA data repository.

One of the strengths of the EPTA is its broad, diverse and egalitarian structure. Involving collaborators of different nationalities and backgrounds and in particular encouraging and supporting early career researchers, the EPTA is a model of international and generational collaboration.