

Prospects for gravitational wave astronomy with next generation large-scale pulsar timing arrays

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Next generation radio telescopes, namely the Five-hundred-meter Aperture Spherical Telescope (FAST) and the Square Kilometer Array (SKA), will revolutionize the pulsar timing arrays (PTAs) based gravitational wave (GW) searches. We review some of the characteristics of FAST and SKA, and the resulting PTAs, that are pertinent to the detection of gravitational wave signals from individual supermassive black hole binaries. Distance reach of individual binaries based on the optimized observation scheme and the relevant data analysis challenges and possible solutions will be discussed for the future PTAs.

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