

## Astrometry, gravitational waves and synergies with Pulsar Timing Arrays

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Several Pulsar Timing Array (PTA) collaborations have recently announced strong evidence for a stochastic gravitational background (SGWB) at nanohertz frequencies. In the same frequency range, high precision astrometry with surveys like Gaia can offer complimentary constraints on SGWB by tracking the positions of a large number of distant sources. We review the astrometric response to SGWB and discuss the potential of PTA-Astrometry cross-correlations to improve upon the SGWB constraints coming from PTA data alone. We show that such cross-correlations can enhance the overall sensitivity to SGWB, even when the constraining power of the astrometric data alone is low.

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