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Using Pulsar Timing Arrays to Probe Solar Activity

Precise timing of a radio pulsar below approximately 3 GHz requires precise measurements of its dispersion measure (DM) as it varies in time. The DM is a direct measure of the integrated electron density between the Earth and the pulsar. With multiple years of very precise DM measurements for tens of pulsars, the North American Nanohertz Observatory for Gravitational Waves (NANOGrav) can clearly see DM contributions from the solar neighborhood. I will discuss how NANOGrav can use its collection of DM measurements to constrain solar activity, show some preliminary results, and discuss near-future prospects for better using pulsar DM measurements to study the Sun.