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**Searching for Eccentric SMBHB Signals in NANOGrav** BELINDA CHEESEBORO, SARAH BURKE-SPOLAOR, West Virginia University — Supermassive black hole binaries (SMBHB) are one of several gravitational wave sources that could be detected by pulsar timing arrays like the North American Nanohertz Observatory for Gravitational waves (NANOGrav). In the past, the calculation of gravitational waveforms for eccentric supermassive black hole binaries was prohibitively computationally expensive as compared to the circular case. Thus, only circularized binaries have been considered in past all-sky GW searches. Recent algorithmic development has optimized the eccentric waveform search process. With that new framework, we are now developing an all-sky search pipeline for eccentric supermassive black hole binaries in pre-existing NANOGrav data. We will present preliminary results from this search.

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