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**Search for Gravitational Wave Radiation Associated with the Pulsating Tail of the SGR 1806-20 Hyperflare** LUCA MATONE, Columbia University, FOR THE LIGO SCIENTIFIC COLLABORATION — We present the sensitivity for Gravitational Waves (GWs) associated with the X-ray pulsating tail of the SGR 1806-20 hyperflare of December 27, 2004 using the LIGO Hanford (WA) 4km detector. The search targeted potential quasi-monochromatic GWs lasting for tens of seconds and emitted at the observed Quasi-Periodic Oscillation (QPO) frequencies and their second harmonics. Using a simple source model, we illustrate the astrophysical significance of this result by comparing the corresponding characteristic energy allowed in GWs to the total energy estimated to have been emitted in the observable electromagnetic spectrum. This analysis provides a means to probe the energy reservoir of the source at realistic levels and represents the first broadband asteroseismology measurement using a GW detector.

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