

# WITHDRAWN - From gamma rays to gravitational waves: multi-messenger emission from pulsar glitches

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Pulsars are the main population of gamma-ray emitters in the Galaxy. To date, the Fermi Large Area Telescope (LAT) has detected about 300 gamma-ray pulsars, some young and energetic and others belonging to the family of older and fast-rotating millisecond pulsars. Because of their much broader gamma-ray beams, a significant number of LAT pulsars discovered in gamma rays are undetectable in radio, making the LAT an ideal instrument to carry out an unbiased study of pulsars. Gamma-ray pulsars often exhibit glitches, or sudden changes in frequency  $f$  and other timing parameters, with  $\Delta f/f$  ranging from  $\sim 1e-12$  to  $1e-5$ . Although studied for decades, the exact nature of pulsar glitches remains unclear. Glitches are believed to affect the magnetospheric emission of a pulsar, and a fraction of the energy released during a glitch is expected to be converted to gravitational waves. The gravitational signature of a pulsar glitch is expected to be a transient signal potentially detectable by current or future ground-based gravitational wave detectors. We will report on the prospects for observing electromagnetic and gravitational wave emission from pulsar glitches, with particular attention to the most interesting candidates among gamma-ray pulsars.

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