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# Vela Pulsar Glitches and Nuclear Superfluidity

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At the endpoint of stellar evolution, pulsars are spinning extremely rapidly with periods ranging from milliseconds to seconds and delays of a few milliseconds per year at most, thus providing the most accurate clocks in the universe. Nevertheless, some pulsars exhibit sudden decreases of their spin period. Because it was the first observed pulsar to exhibit such "glitches", Vela has become the testing ground for glitch theories. Sudden pulsar spin-ups have long been thought to be the manifestation of a neutron superfluid permeating the crustal layers of these dead stars [1]. However, recent calculations indicate that this scenario is unrealistic [2,3] because neutrons are very strongly coupled to the crust due to non-dissipative entrainment effects [4]. These effects, which were previously ignored, not only challenge the interpretation of Vela pulsar glitches but also suggest that a revision of the interpretation of other observed neutron-star phenomena might be necessary.

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