Constraining Hadronic Superfluidity with Neutron Star Precession
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abstract I show that the standard picture of the neutron star core containing coexisting neutron and proton superfluids, with the proton component forming a type II superconductor threaded by flux tubes, is inconsistent with observations of long-period (~ 1 yr) precession in isolated pulsars. I conclude that either the two superfluids coexist nowhere in the stellar core, or the core is a type I superconductor rather than type II. Either possibility would have interesting implications for neutron star cooling and theories of spin jumps (glitches).

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