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Superfluidity and glitches

The observation of a large glitch in the Vela pulsar in 1969 initiated a discussion that is still – more than half a century later – ongoing. The general view is that the glitch phenomenon is linked to the presence of a superfluid component penetrating the neutron star crust. However, this remains (in many ways) a cartoon-level explanation. Quantitative modelling is a challenge. In this talk I will contrast the growing observational evidence (including recent anti-glitch event) with available theory. The aim is to establish what we actually know and what we need to do in order to make decisive progress on this vexing problem.

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