

Physics of drifting sub-pulses in radio pulsars

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ABSTRACT: Understanding the phenomenon of drifting sub-pulses may well be crucial to our understanding of pulsar electrodynamics, in particular of the detailed geometry of the electric circuit and the sites of radio emission on the open field lines. We review existing interpretations of drifting sub-pulses and discuss a recent interpretation in terms of a diocotron instability in a differentially rotating relativistic beam of pair plasma moving out from the pulsar along the open field lines.

Fung, P.K., Khechinashvili, D., Kuijpers, J. 2006, A&A, 445, 779