# Modes of Energy Loss from Isolated Magnetized Neutron Star

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Pulsar may be regarded as a discharge tube by electron-positron pair creation. On this viewpoint we carry out two numerical calculations. The obtained magnetic field is consistent with the flow. We find that pulsars emit their rotational energy through three modes simultaneously. The three modes are (1)relativistic acceleration and following gamma-ray emission in the closed current circuit in the magnetosphere, (2)wind of the electron-positron pair plasma, and (3)dipole radiation.

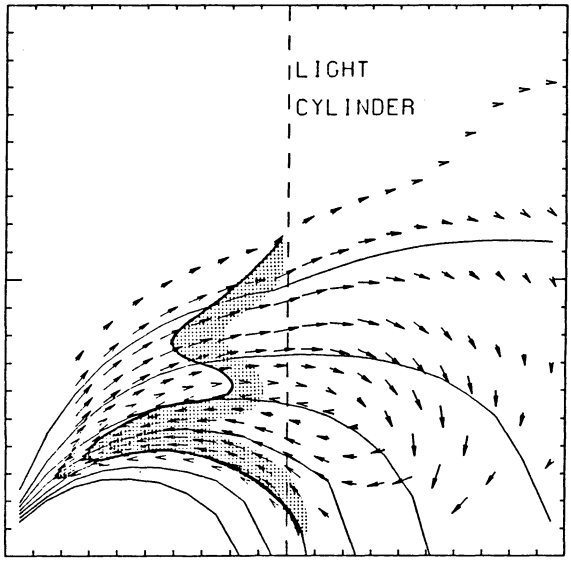


Fig. 1. A numerical model with the circular flow (the closed current circuit). The mechanism of acceleration is that given by Mestel in IAU Symposium No. 95 (1982). We confirm the strong relativistic acceleration causing the trans-field flow in the transition layer (shaded region). Note that the magnetic field, which is consistent with the flow, is closed. Our model suggests the pair creation in the region of the trans-field flow.

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*D. J. Helfand and J.-H. Huang (eds.), The Origin and Evolution of Neutron Stars, 450.*


https://doi.org/10.1017/S0074180900161121 Published online by Cambridge University Press