2005 Vol.43 No.4 pp.704-708 DOI:

Neutron Star Magnetic Field as for Nonzero Photon Mass

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(Received: 2004-9-10; Revised:)

Abstract: We investigate the neutron star magnetic field by the relative mean-field theory, where the photon effective mass depending on baryon density of charged particles is nonzero. This field is produced by star itself, which is the function of baryon density. The result fits the observations.

PACS: 24.85.+p, 12.38.Lg, 11.15.Pg

Key words: effective photon mass, Fermi momentum, β-equilibrium

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