

Non-detection in Fermi-LAT observations of magnetars: physical implications

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We have analyzed the physical implications of Fermi-LAT observations of magnetars. Observationally, no significant detection is reported in Fermi-LAT observations of all magnetars. We point out that there are conflicts between outer gap model in the case of magnetars and Fermi observations. One solution is that anomalous X-ray pulsars and soft gamma-ray repeaters are actually accretion systems. Another possible explanation is that magnetars are wind braking instead of magnetic dipole braking. In the wind braking scenario, magnetars are neutron stars with strong multipole field. A strong dipole field is no longer required. Future deeper Fermi-LAT observations will help us to distinguish between the magnetar model and the accretion model for AXPs and SGRs.

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