

Abstract Submitted
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Properties of QED plasma in magnetars¹ MIKHAIL MEDVEDEV,
Univ of Kansas — Quantum electrodynamics (QED) effects are interesting phenomena that occur in strong electromagnetic fields. Astrophysical systems such as strongly magnetized neutrons stars and magnetars possess magnetic fields close to or even stronger than the Schwinger field. Whereas some QED effects are being understood and incorporated in plasma codes, theoretical studies of QED plasmas are lacking. Here we derive the general equations describing QED plasma modes. We discuss the properties of the low-frequency modes, for which the transitions between the Landau levels can be neglected. These results can be of interest for understanding of the origin of fast radio bursts (FRBs).

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