

Singularitas skalar dalam teori gravitasi eddington-inspired born infeld (EiBI) pada bintang = Scalar singularity in eddington-inspired born infeld (EiBI) theory of gravity on stars

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Abstrak

Teori gravitasi Eddington-inspired Born Infeld EiBI menyediakan ranah baru untuk kopling antara gravitasi-materi di luar relativitas umum Einstein. Kopling gravitasi-materi dipandang sebagai kontribusi anisotropik tambahan terhadap relativitas umum Einstein pada bintang. Struktur bintang dipelajari untuk persamaan keadaan bintang neutron politropik dan bintang neutron realistik. Massa dan radius bintang pada EiBI dengan materi anisotropik untuk ekspansi ϵ orde rendah mendekati struktur EiBI standar dengan kopling pada materi isotropik. Batas ϵ agar memenuhi kriteria bintang anisotropik bergantung pada stiffness persamaan keadaan bintang. Berdasarkan pendekatan ini, singularitas skalar Ricci dan Kretschmann tidak ditemukan di permukaan bintang.

.....Eddington inspired Born Infeld theory of gravity EiBI provides a new playground for gravity matter coupling beyond general relativity GR . In this manuscript, I consider gravity matter coupling in EiBI as an additional anisotropic contribution to GR on stars. I show that for low order series expansion of parameter the structure of star are close to original theory. I also investigate some criteria for anisotropic star structure in this theory for polytropic and realistic neutron star equation of state EoS . The constraint of depends on the stiffness of EoS. Based on this approach, the singularity of Ricci and Kretschmann curvature scalar are not found at the surface of the star for first and second order expansion in this theory.