Transisi fasa lubang hitam pada teori gravitasi eddington inspired born-infeld = Black holes phase transition in eddington inspired born-infeld theory of gravity

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Abstrak

Kami menyajikan analisis rinci tentang properti termodinamika serta mekanisme transisi fasa yang terjadi pada lubang hitam bermuatan listrik di teori gravitasi Eddington inspired Born-Infeld. Properti termodinamika diperoleh melalui metode surface gravity, dan analisis struktur fasa serta konfigurasi stabilitas lubang hitam dilakukan berdasarkan kalor spesifik serta energi bebasnya. Ditemukan bahwa struktur fasa lubang hitam bermuatan listrik di teori gravitasi Eddington inspired Born-Infeld baik di ruang de Sitter dan Anti de Sitter berperilaku seperti lubang hitam Schwarzschild dalam batas besar ?, dan hal ini mengindikasikan bahwa lubang hitam Schwarzschild merupakan preferred state pada teori gravitasi EiBI.
.....We present a detailed analysis of the thermodynamics and phase transition phenomena of electrically charged black holes in Eddington inspired Born Infeld theory of gravity. The thermodynamics properties are obtained through the surface gravity method that are well known in black hole mechanics. We analyse the phase structure and the stability configuration of the black holes through the property of its specific heat and free energy. It is found that the phase structure of electrically charged black holes in Eddington inspired Born Infeld both in de Sitter and Anti de Sitter spacetime behaves like Schwarzschild black holes in the large limit of , therefore indicating that it is the preferred state of the black holes.