

INTISARI

Perumusan Kovarian Gravitasi Teleparalel Untuk Ruang-Waktu Vaidya yang Diperumum

Oleh

Hergamma Ramadhani Pramono Putro
20/462104/PA/20076

Solusi Vaidya beserta perumumannya merupakan perluasan tak statis bagi solusi Schwarzschild. Solusi Vaidya memiliki banyak terapan dalam bidang astrofisika dan kajian teoretis. Namun, hingga saat ini belum ditemukan perumusan kovarian gravitasi teleparalel untuk ruang-waktu Vaidya dalam literatur. Dalam penelitian ini, telah dilakukan perumusan kovarian gravitasi teleparalel untuk ruang-waktu Vaidya. Tetrad terkait ruang-waktu Vaidya yang diperumum telah diperoleh. Tetrad referensi dan potensial tera gravitasi terkait tetrad yang diperoleh telah diidentifikasi. Koneksi Spin telah didapat serta efek inersia pada kerangka terkait telah diidentifikasi. Torsi, kontorsi, dan superpotensial serta efek gravitasi dalam kerangka terkait juga telah diperoleh.

Kata-kata kunci : solusi Vaidya, gravitasi teleparalel, perumusan kovarian

ABSTRACT

Covariant Teleparallel Gravity Formulation of Generalized Vaidya Spacetime

By

Hergamma Ramadhani Pramono Putro
20/462104/PA/20076

Vaidya's solution and its generalization are non-static extensions of Schwarzschild's solution. Vaidya's solution has numerous applications in astrophysics and theoretical studies. However, no covariant formulation of teleparallel gravity for Vaidya spacetime has been found in the literature. In this study, a covariant teleparallel gravity formulation of generalized Vaidya spacetime has been developed. A tetrad associated with Vaidya spacetime has been determined. The reference tetrad and gravitational gauge potential corresponding to the obtained tetrad have been calculated. The associated spin connection has been obtained, and the inertial effects of the corresponding frame have been identified. The torsion, contortion, and superpotential associated to the obtained tetrad have been calculated, and the gravitational effects in the corresponding frame have been identified.

Keywords : Vaidya solution, teleparallel gravity, covariant formulation