

## INTISARI

### **Pengkuantuman Kanonis Gravitasi Teleparalel**

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Telah dilakukan penyelidikan dan pengkuantuman struktur kanonis teori gravitasi teleparalel. Penyelidikan struktur kanonis dikerjakan dalam basis Arnowitt-Deser-Misner (ADM). Penyelidikan dimulai dengan mengidentifikasi kendala-kendala dalam pengertian Dirac yang dimiliki oleh teori ini kemudian dicari Hamiltonan kanonis. Ditemukan bahwa kendala Hamiltonan teori gravitasi teleparalel ternyata tidak melibatkan suku permukaannya sehingga setelah teori ini dikuantumkan dengan metode Dirac dapat dipastikan operator Hamiltonan kanonis memiliki swanilai tidak nol. Meskipun demikian, bentuk hasil kali skalar teori ini belum bisa didapatkan. Selain itu persamaan kendala kuantum belum diselesaikan, sehingga perlu penyelidikan lebih lanjut sebelum bisa menyusun ruang Hilbert teori ini.

**Kata kunci:** basis ADM, kendala, pengkuantuman metode Dirac, struktur kanonis, teleparalel.

## ABSTRACT

### *Canonical Quantization of Teleparalel Gravity*

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In this study, the canonical structure of teleaprallel equivalent of general relativity has been analyzed and quantized. The canonical structure is analyzed in the Arnowitt-Deser-Misner (ADM) basis. The analysis is carried out by identifying all of the constraints of this theory before constructing the canonical Hamiltonian of the theory, and it has been found that one of the Hamiltonian's term was not present in the Hamiltonian constraint and consequently after carrying out Dirac's quantization program it is obtained that Hamiltonian operator has nonzero eigenvalues. Nevertheless, the scalar product of this theory has not been found. Furthermore, not all quantum constraints of this theory has been solved, therefore a further analysis of the quantum theory is needed before constructing the Hilbert space of this theory.

**Keywords:** ADM basis, Canonical structure, constraint, Dirac quantization program, telelparallel.