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**On the uniqueness of the Fock quantization of the Dirac field in the closed FRW cosmology.**  
(English) [Zbl 1408.83047](#)  
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Summary: The Fock quantization of free fields propagating in cosmological backgrounds is in general not unambiguously defined due to the nonstationarity of the space-time. For the case of a scalar field in cosmological scenarios, it is known that the criterion of unitary implementation of the dynamics serves to remove the ambiguity in the choice of Fock representation (up to unitary equivalence). Here, applying the same type of arguments and methods previously used for the scalar field case, we discuss the issue of the uniqueness of the Fock quantization of the Dirac field in the closed FRW space-time proposed by *P. D. D'Eath* and *J. J. Halliwell* ["Fermions in quantum cosmology", *Phys. Rev. D* (3) 35, No. 4, 1100–1123 (1987; doi:10.1103/PhysRevD.35.1100)].

**MSC:**

**83F05** Cosmology  
**83C45** Quantization of the gravitational field  
**81T20** Quantum field theory on curved space or space-time backgrounds

**Keywords:**

Fock quantization; Dirac field; closed FRW cosmology

**Full Text:** [DOI](#)

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