

# **The Foldy-Wouthuysen Transformation of the Dirac Equation in Non-Commutative Phase Space.**

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## **Abstract**

A method of Foldy-Wouthuysen transformation for relativistic spin-1/2 particles in external fields is proposed, in the present work the basic properties of the Dirac hamiltonian in the FW representation in the noncommutative phase-space are investigated and the Schrödinger-Pauli equation is found, knowing that the used methods for extracting the full phase-space noncommutative Dirac equation are, the Bopp-shift linear translation method, and the Moyal-Weyl product (star-product).