Perspective on spin filtering

Abstract

The presentation of an electron state is the spin amplitudes dependence on space-time. There is a linked electromagnetic field fulfilling the Maxwell equations which sets the 4-potential for the effective Hamiltonian and the state is a solution of the associated time dependent Schrodinger equation. We show that the electromagnetic field obeying the Maxwell equations is sufficient for setting up the equations of motion of parity states. Conversely, the handed classes of states require extended Maxwell equations where parity is not necessarily implied. The derived consistency of handed electron states supports new flavor to the nature such electrons.