DIFTA

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Regularity properties and asymptotic analysis of the Dirac–Maxwell system.

Abstract: The Dirac–Maxwell system results from a coupling of the Dirac equation for a 4-spinor to the Maxwell equations for the self-consistent field created by the moving charge of the spinor. I will talk about some old and new results concerning the local and global regularity properties of the initial value problem. Further, I will discuss the asymptotic behavior of solutions as the speed of light tends to infinity (the transition to the non-relativistic regime) and/or the Planck constant tends to zero.