

Relativistic Effects in the Particle Acceleration by Large Amplitude Waves^{*}, G. CORSO, R. PAKTER, F.B. RIZZATO, IF-UFRGS, Brasil - In this work, we reconsider the problem of particle acceleration by large amplitude electromagnetic waves. We make use of a fully relativistic Hamiltonian formalism to show that, as opposed to nonrelativistic results recently obtained¹, acceleration in unmagnetized systems is severely arrested when the phase-velocity of the electromagnetic mode approaches the speed of light. For subluminal waves, however, acceleration is shown to be still effective.

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1 S.P. Kuo & M.C. Lee 1994 J. Plasma Phys. 52, 339.