

Abstract

Exact solution for Maxwell equations is found for positron and electron (dipole) moving in external uniform electric field for some specific initial conditions. Asymptotic behaviour of electric and magnetic field intensities and invariance properties are considered. It is shown that the dipole does not radiate electromagnetic wave though the second time derivative of the dipole moment is nonzero.

Radiation of electromagnetic wave with the electron accelerated in capacitor is also considered. The radiation friction force is zero for the movement inside the capacitor. It is shown that radiation friction force acts only in the region close to the boundary of the capacitor and the sum of its work with the radiated energy is zero.