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A mass-energy equivalence law as $E = \frac{1}{2} mc^2$

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This paper assumed that the charge and mass of a particle are independent of its speed relative to an observer. A moving particle of charge Q and mass m with an electrostatic field E_o at an angle θ to the direction of speed v is considered. The intrinsic energy of the particle is contained in its electrostatic field. The magnetic field generated takes no energy. It is shown that, as a result of aberration of electric field E_o , becomes a dynamic electric field E_v displaced by aberration angle α from the stationary position. Equating the difference between the energy of dynamic field E_v and the energy of electrostatic field E_o , with the kinetic energy $\frac{1}{2}$ mv² of the particle, gives a mass-energy equivalence law as $E = \frac{1}{2}$ mc². It is also shown that a charged particle moving at time t with acceleration $\frac{1}{2}$ module to the charge. It is proposed that E_a acts on the same charge Q producing it, to create a reactive force equal and opposite to the accelerating force, so that $E_a Q = -\mu_o \varepsilon_o \phi (\frac{1}{2})$ where $\mu = -2E\mu_o\varepsilon_o (\frac{1}{2})$, where $E = \phi Q/2 = \frac{1}{2}$ mc² is the electrostatic energy and $c^2 = 1/\mu_o\varepsilon_o$, c being the speed of light. The reactive field E_a explains the cause of inertia of a body as an electrical effect in the body.

Biography

Musa D Abdullahi obtained his BSc degree in Physics from the University of Manchester, England, 1965. He was the first person to obtain a Postgraduate degree in Electronics and Telecoms from Ahmadu Bello University, Zaria, Nigeria in August 1968. He taught at Ahmadu Bello University, Zaria and Federal University of Technology Minna in Nigeria. He is a Fellow of the Nigerian Academy of Engineering. He retired from public service in August 2000. He is now an Adjunct Lecturer in the Department of Physics, UMYU, Katsina, Nigeria. He is a prolific contributor of papers in online journals.

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