Mass Displacement Field : R-Field

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Abstract

In this paper a new field theory for a moving mass has been presented.
Keywords : Field theory, Moving mass.

1 INTRODUCTION

A moving charge produces a magnetic field. In an analogous manner, it can be assumed that a moving mass will produce a field which can be termed as mass displacement field or R-field.

2 ETHER : A MEDIUM FOR R-FIELD

Let's assume that there exists a medium termed as 'ether' which is responsible for R-field.

3 LAW OF R-FIELD

R-field **R** in a medium due to a moving mass m, at a distance r from the mass will be

$$\mathbf{R} = \frac{\gamma\, m\, \mathbf{v} \times \mathbf{r}}{4\pi\, r^3}$$ [γ is a medium-dependent constant]

where **v** is the relative velocity of mass m with respect to the ether.

4 LAW OF R-FORCE

R-force **F** experienced by a moving mass m in a R-field **R** will be

$$\mathbf{F} = m(\mathbf{v} \times \mathbf{R})$$

where **v** is the relative velocity of mass m with respect to the source of R-field.

5 MASS CURRENT

Let's define a mass current as

$$I_m = \frac{dm}{dt}$$

6 BIOT-SAVART LAW FOR R-FIELD

It can be obtained from the law of R-field that the infinitesimal R-field **dR** due to an infinitesimal mass current element I_m**dl**, at a distance r from it will be

$$\mathbf{dR} = \frac{\gamma\, I_m \mathbf{dl} \times \mathbf{r}}{4\pi\, r^3}$$

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References

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