Form of Intensity of the Moving Charge Electric   Field is asymmetrical.

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Abstract

Relationship Lorentz derived from the asymmetrical form of the intensity of the moving charge. To derive it we do not need Lorentz's transformations equations, that is we do not need SPACE-TIME. We do not need local time, or covariant equations or physical simultaneity definition or invariant interval From the asymmetrical form of the intensity of the moving charge we can derive Gauss law, Faraday's law and derive the 4th Maxwell's equation, fictional by Maxwell and not to be derived.Kinetic energy of a charge moving at the velocity of v **has two different values:** in direction of motion as own kinetic energy of charge and against direction of motion of charge represents the wave energy, which creates charge in transmision medium.

Shortened theory

This is the distance at which the charge "outrun" the intensity propagated in direction of the charge motion. Consequently the intensity of the moving charge in relation to the system of coordinates *(x, y, z)* will change its form in the respective $\oplus$ of various *r*: it will be deformed (see Fig. 2.3)
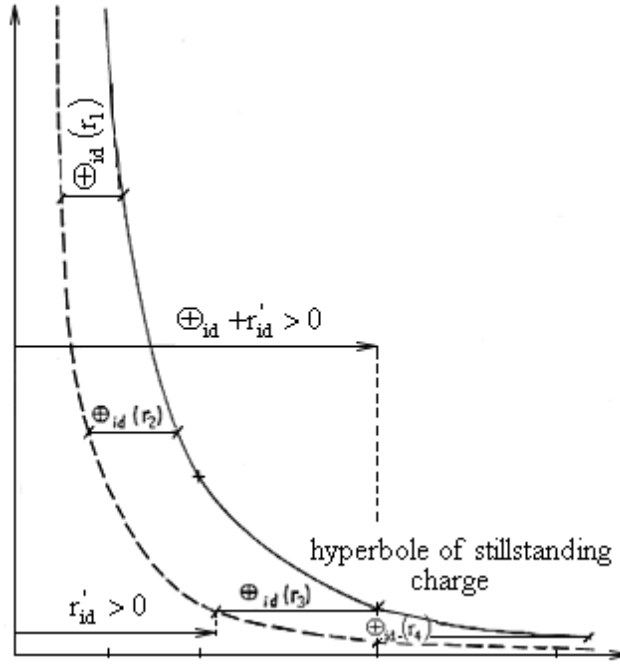
Fig. 2.3. The intensity of the moving charge in the direction of the motion E_{mov}^{id}

This is the distance by which the intensity that propagates in the direction opposite to the movement of the charge, is shifted against the intensity of the stillstanding charge in the direction away from the charge, see Fig. 2.5.

Analogically to equations (2.5) - (2.10) we achieve the following:

$$E_{mov}^{ad}(r') = E_{still}(r' + \oplus_{ad}) \tag{2.14}$$

$$E_{still}(r' + \oplus_{ad}) = const \frac{1}{(r' + \oplus_{ad})^2} \tag{2.15}$$

$$E_{still}(r') = const \frac{1}{r'^2} \tag{2.16}$$

$$E_{mov}^{ad}(r') = const \frac{1}{(r' + \oplus_{ad})^2} \tag{2.17}$$

$$\frac{E_{mov}^{ad}(r')}{E_{still}(r')} = \frac{r'^2}{(r' + \oplus_{ad})^2} = \left(1 + \frac{v}{c}\right)^2 \tag{2.18}$$

$$E_{mov}^{ad} = E_{still}\left(1 + \frac{v}{c}\right)^2 \tag{2.19}$$

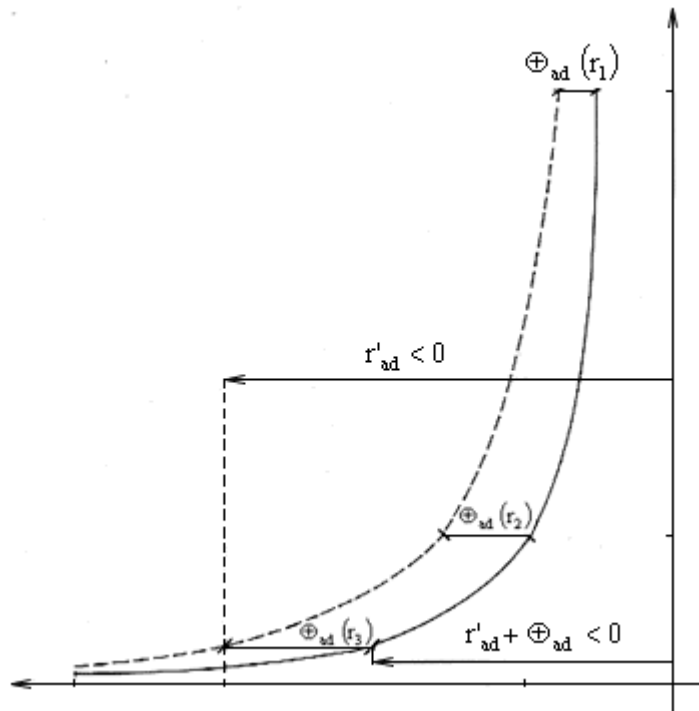The form of intensity for v=0.5c see Fig. 2.6.

Fig. 2.5. The intensity of the electric field by means of the moving charge against the direction of motion E^{ad}
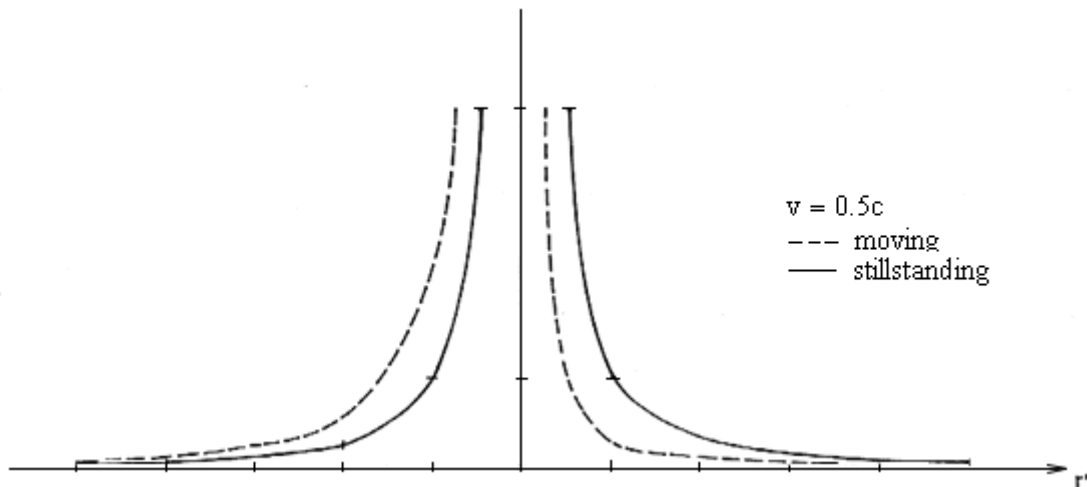

Fig. 2.6. The form of intensity for $v = 0.5c$

The equations (2.10) and (2.19) are placeable by common equation

$$E_{mov} = E_{still}\left(1 - \frac{v}{c}\cos\vartheta\right)^2 \qquad (2.20)$$

where ϑ is the angle between the direction of the charge motion (the speed v) and the direction of propagation of intensity.

At level *xy*, the section of the intensity hyperboloid is, for the stillstanding charge, the circle with its centre in the charge, for the moving charge it is the case of all types of Pascal's screw s2.10. tocks with the charge at the beginning of the coordinates, see   Fig. 2.7, Fig. 2.8, Fig.2.9, and Fig. 2.10.
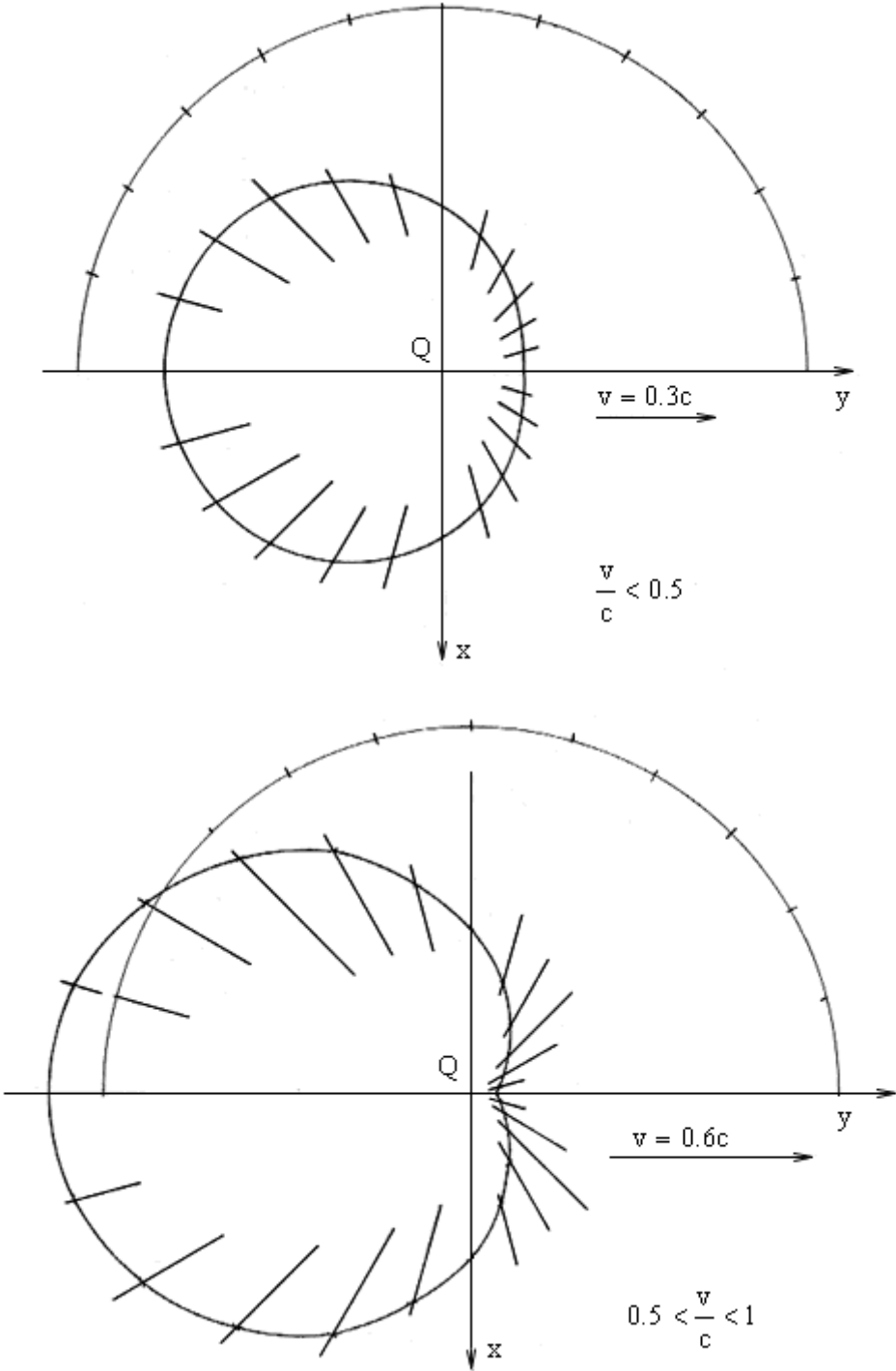

Fig. 2.7, 2.8. At level *(x, y)* section of the "hyperoloid" of the intensity for various speeds of the moving charge have a shape of all types of Pascal's screw stocks with charge at the beginning of the coordinates

Fig. 2.9, 2.10. At level *(x, y)* section of the "hyperoloid" of the intensity for various speeds of the moving charge have a shape of all types of Pascal's screw stocks with charge at the beginning of the coordinates
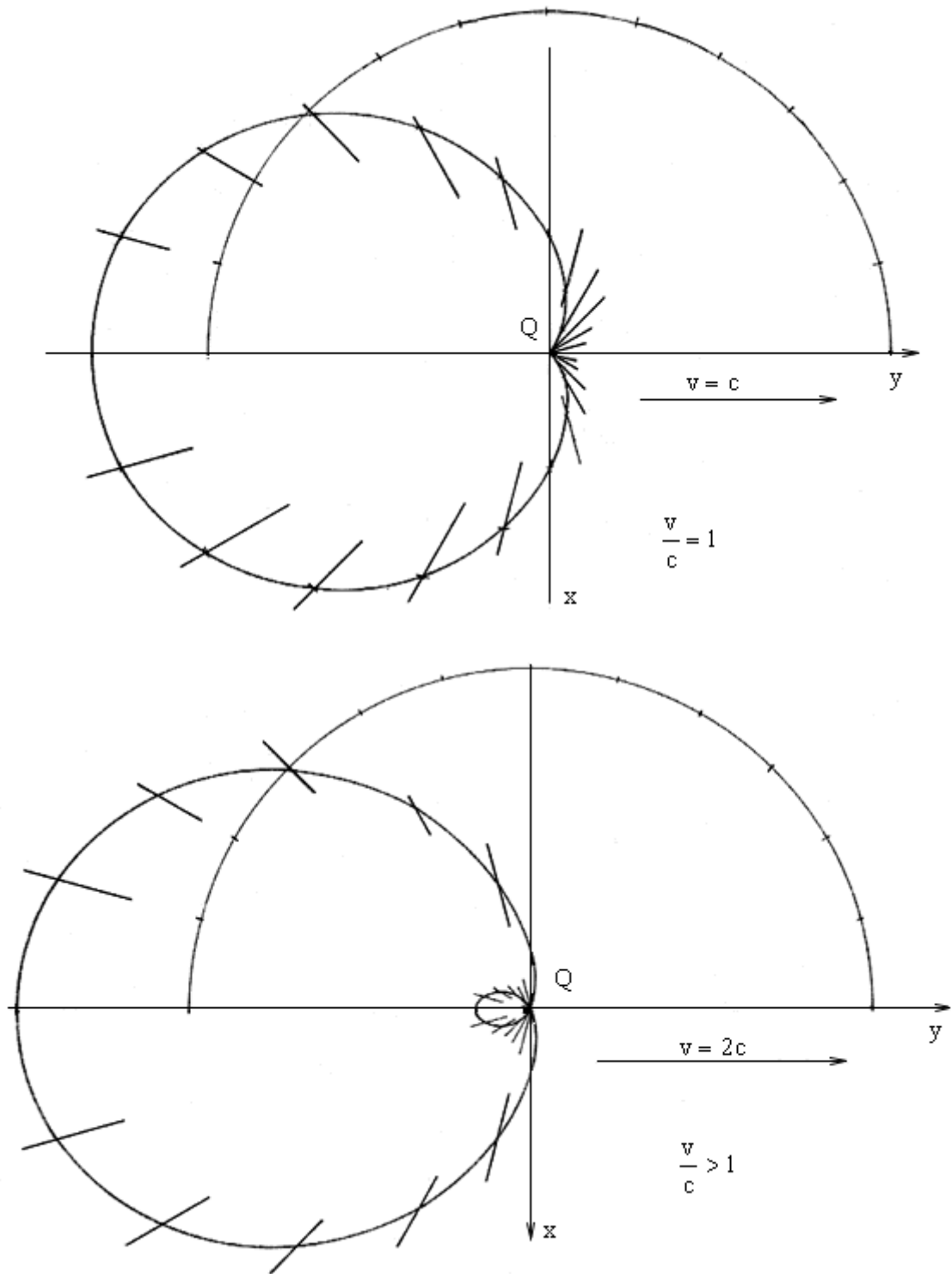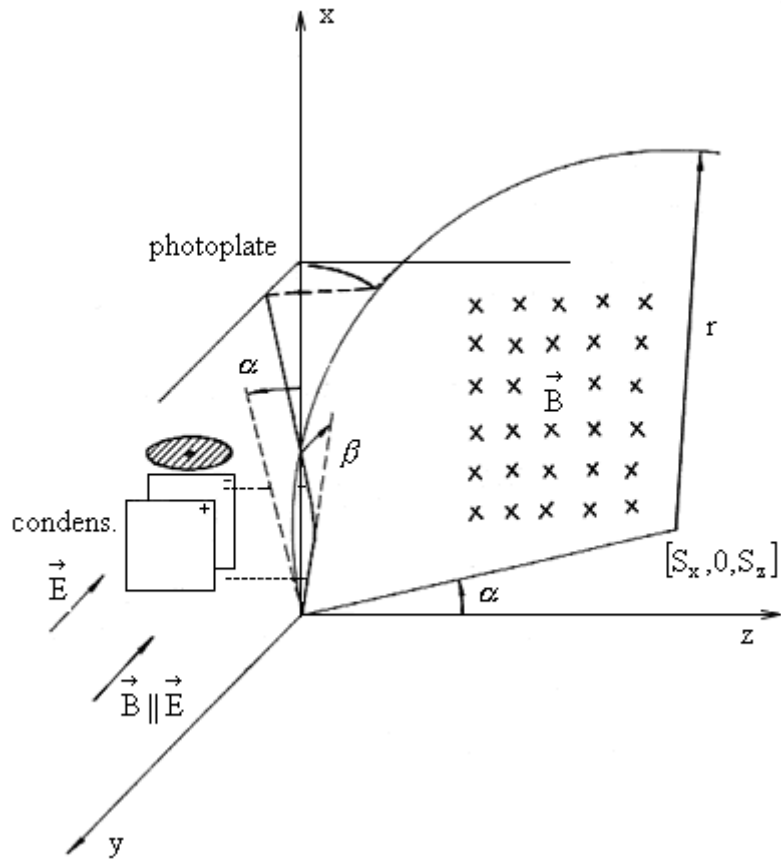
Kaufmann's Experiment

Fig. 2.11. Kaufmann's Experiment - diagram

The values E used in the calculations

$$E = 205.5 \cdot 10^{10} \quad 328 \cdot 10^{10} \quad 409.5 \cdot 10^{10} \quad \left(\text{for } v = 0.48c\right) \tag{2.25*}$$

would give, after substitued into (2.23*) and (2.24*) the deviations
$y = 0.2363 \quad 0.3873 \quad 0.4985$ which are almost four times bigger as those acquired (y_b) by Kaufmann.

Considering out theory on $E^{id,ad}_{mov}$ and the values (2.25*) be multiplied by $\left(1 - \dfrac{v}{c}\right)^2$ we achieve deviations identical with the results of Kaufmann's experiment, see table 1. Thus the theory under 2.1. concerning the intensity of the moving charge of the electric field may be regarded experimentally confirmed.

Table 1.

	1631 V	2603 V	3250 V
y_b[cm]	0.1236 0.1119	0.1493 0.1302	0.1664 0.1616
β	2°	3°11'	4°30''
y[cm]	0.23626	0.3873	0.4985
y_T[cm]	0.0629	0.09947	0.12557
y_T-theoretical value (our new theory): $y_T \sim y_b$			

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[8] KAUFMANN, W.: Annalen der Physik, Vierte Folge, Band 19, Leipzig 1906, Verlag von Johann Ambrosius Barth, page 487-552

Kinetic energy of electron (proton) $T_{kin\ id} = mc^2 [ln\ |1-v/c| + (v/c) / (1-v/c)]$ in direction of motion of electron (proton), where v is velocity of electron (proton) and m is mass of electron (proton)[2]. It's own kinetic energy of the electron (proton).

Kinetic energy of electron (proton) $T_{kin\ ad} = mc^2 [ln\ |1+v/c| - (v/c) / (1+v/c)]$ against direction of motion of electron (proton), where v is velocity of electron (proton) and m is mass of electron (proton. Represents the wave energy, which creates electron (proton) in transmision medium.

Electron (proton) as a source exists if and only if repeatedly speeds up and slows down its movement in source along ellipse (when blinks).

Electron (proton) as a source, creates in the transmission medium, electromagnetic wave, that spreads in all directions with the velocity c / n,

regardless of the source movement, where n is the refractive index of the transmission medium.

In other words, electron (proton) , which is the source, can not be a transmission medium and remain in it.

The main characteristic of the waves is the energy transfer through a transmission medium.

And no transfer of the substance (= of real electron,proton) from the source to the transmission medium.

Wave exists if and only if there is not a source.

In the case of electromagnetic waves, see

2.1.3 The electromagnetic field. Maswell's equations, p. 28[2] electric field intensity E and the magnetic induction B are both associated with the intensity of a moving charge

$$E_{mov} = E_{still}\left(1 - \frac{v}{c}\cos\vartheta\right)^2$$

$$= E_{still} + B \quad \text{where} \qquad B = \frac{E_{still}}{c}\left(2 + \frac{v}{c}\sin\phi\right)$$

The force acting on the moving electric charge is

$$F = QE_{mov} = QE_{still}\left(1 - \frac{v}{c}\cos\vartheta\right)^2 = QE_{still}\left(1 + \frac{v}{c}\sin\phi\right)^2 =$$

$$= QE_{still} + QE_{still}\left(2 + \frac{v}{c}\sin\phi\right)\frac{v}{c}\sin\phi$$

whereby $-\cos\beta = \sin\phi$

$$F = F_{el} + F_m = QE + Q(v \times B)$$

What is the relationship Lorentz derived from the asymmetrical form of the intensity of the moving charge. To derive it we do not need Lorentz's transformations equations, that is we do not need SPACE-TIME.
We do not need local time, or covariant equations or physical simultaneity definition or invariant interval. In other words, in physics we do not need Einstein's theory of relativity.

From the asymmetrical form of the intensity of the moving charge we can derive Gauss law,

Faraday's law and derive the 4th Maxwell's equation, by a Maxwell thinks up and not derived !

The electromagnetic field. Maswell's equations. (Cited from [2] pages 27 – 30):

„Let us take the equation (2.20) in the vector form:

$$E_{mov} = E_{still}\left(1 - \frac{v}{c}\cos\vartheta\right)^2 \qquad (2.21)$$

The force acting on the moving electric charge is

$$F = QE_{mov} = QE_{still}\left(1 - \frac{v}{c}\cos\vartheta\right)^2 = QE_{still}\left(1 + \frac{v}{c}\sin\phi\right)^2 =$$

$$= QE_{still} + QE_{still}\left(2 + \frac{v}{c}\sin\phi\right)\frac{v}{c}\sin\phi$$

$$(2.22)$$

whereby $-\cos\beta = \sin\phi$

It is known, in line with the classical theory, that a magnetic field is created by the moving charges and electric currents. The result is that the moving charge creates its own magnetic field of induction B_q. It continues in this field in motion. According to Lorentz, the force acting on the moving charge in the electromagnetic field at speed v in the magnetic field of induction B and in the electric field of the following intensity E it is valid:

$$F = F_{el} + F_m = QE + Q(v \times B) \tag{2.23}$$

Let us compare the equations (2.22) and (2.23) .

Intensity E of the electric field according to Lorentz equals to our intensity E_{still}.

As the forces acting on the acting on the moving charge are equal, it must be valid

$$E_{still}\left(2 + \frac{v}{c}\sin\phi\right)\frac{v}{c}\sin\phi = v \times B \tag{2.24}$$

With regard to the fact that both the direction E_{still} and the direction of the vector $v \times B$ are identical, for the absolute values it is possible to write

$$E_{still}\left(2 + \frac{v}{c}\sin\phi\right)\frac{v}{c}\sin\phi = v \cdot B \cdot \sin\phi$$

i.e.

$$B = \frac{E_{still}}{c}\left(2 + \frac{v}{c}\sin\phi\right) \tag{2.25}$$

This means that the charge moving at speed v creates around itself its own magnetic field of the following induction:

$$B = \frac{E_{still}}{c}\left(2 + \frac{v}{c}\sin\phi\right)$$

while the vectorial equation is in force

$$v \times B = E_{mov} - E_{still} \tag{2.26}$$

Where from

$$E_{mov} = E_{still} + v \times B \tag{2.27}$$

The intensity of moving charge comprises in itself also the magnetic field induction B created by the charge moving at speed v.

Based on (2.27) Maxwell's equations which are always valid (not only in static) acquires form:

1.

$$\nabla E_{mov} = \nabla(E_{still} + v \times B) = \nabla E_{still} + \nabla(v \times B) = \frac{\rho}{\varepsilon_0} \qquad (\text{...Gauss law})$$

(2.28)

because
$$\nabla(v \times B) = 0$$

(2.29)

2.
$$\nabla B = 0 \qquad \text{.......} \quad \text{there are no magnetic charges}$$

(2.30)

3.
$$\nabla \times E_{mov} = \nabla \times [E_{still} + (v \times B)] = \nabla \times E_{still} + \nabla \times (v \times B)$$

becose in the statics $\nabla \times E_{still} = 0$

further $\nabla \times (v \times B) = v(\nabla B) - B(\nabla v)$

We use (2.29) and except of constant it is valid

$$\nabla \cdot v = \frac{\partial}{\partial t}$$

(2.31)

Then

$$\nabla \times E_{mov} = -\frac{\partial B}{\partial t} \qquad (\text{...Faraday's law})$$

(2.32)

4. Amper's law in statics

$$c^2 \nabla \times B_{stat} = \frac{j}{\varepsilon_0}$$

(2.33)

$$B_{dyn} = B_{stat} + (B_{dyn} - B_{stat}) = B_{stat} + B_Q$$

Total magnetic field

$$B_{dyn} = B_{stat} + B_Q$$

(2.34)

where

$$B_Q = B_{dyn} - B_{stat}$$

(2.35)

Let's calculate
$$c^2 \nabla \times B_{dyn} = c^2 \nabla \times B_{stat} + c^2 \nabla \times B_Q$$

For own magnetic field B_Q of the charge moving at speed v it is possible to write:

$$c^2 B_Q = (v \times B_Q) \times v \qquad (2.36)$$

$$\nabla \times \left[(v \times B_Q) \times v \right] = (v \times B_Q)(\nabla v) - v \left[\nabla (v \times B_Q) \right] =$$
$$= \frac{\partial (v \times B_Q)}{\partial t} = \frac{\partial (E_{mov} - E_{still})}{\partial t} = \frac{\partial E_{mov}}{\partial t}$$

because $\quad \nabla(v \times B) = 0 \quad , \quad \nabla \cdot v = \dfrac{\partial}{\partial t} \quad , \quad E_{mov} = E_{still} + v \times B$

and because $\quad \dfrac{\partial E_{still}}{\partial t} = 0 \qquad (2.37)$

i.e. $\qquad c^2 \nabla \times B_{dyn} = \dfrac{j}{\varepsilon_0} + \dfrac{\partial E_{mov}}{\partial t} \qquad (2.38)$

what represents the 4th Maxwell's equation".

Consequence : Form of Intensity of the Moving Charge Electric   Field is asymmetrical.

3. Calculation of the kinetic energy T_{kin} of a body moving at the velocity of v

For the sake of simplicity let us consider for instance the gravitational field of the Earth. Analogically to   (2.20) for the intensity of the gravitational field one could write:

$$g_{mov} = g_{still} \left(1 - \frac{v}{c} \cos \vartheta \right)^2 \qquad (3.1)$$

Let us consider the physical processes in which kinetic energy is transformed into potential one and potential energy is transformed into kinetic one. There is a state in which the potential energy equals total energy of the body (while the kinetic energy equals zero) and the state in which kinetic energy equals the total energy of the body (while the potential energy equals zero). These extreme will help us to calculate the kinetic energy of body. For the potential energy we have

$$dW_p = m g_{still} \, dh \qquad (3.2)$$

By integrating and utilizing of the relation (3.1) we have

$$T_{kin} = \int dW_p = \int_0^h mg_{still}\, dh = \int_0^h m\frac{g_{mov}}{\left(1-\dfrac{v}{c}\cos\vartheta\right)^2}\, dh$$

By substituting $g_{mov} = \dfrac{dv}{dt}, \ \dfrac{dh}{dt} = v$

we get

$$T_{kin} = m\int_0^v \frac{v\,dv}{\left(1-\dfrac{v}{c}\cos\vartheta\right)^2} \tag{3.3}$$

Solving by substitution $1-\dfrac{v}{c}\cos\vartheta = z$

we get

$$T_{kin} = \frac{mc^2}{\cos^2\vartheta}\left[\ln\left|1-\frac{v}{c}\cos\vartheta\right| + \frac{\dfrac{v}{c}\cos\vartheta}{1-\dfrac{v}{c}\cos\vartheta}\right] \tag{3.4}$$

while ϑ isn't $\dfrac{\pi}{2}, \ \dfrac{3\pi}{2}$

For $\vartheta = 0°$ we have the kinetic energy in the direction of motion

$$T_{kin_d} = mc^2\left[\ln\left|1-\frac{v}{c}\right| + \frac{\dfrac{v}{c}}{1-\dfrac{v}{c}}\right] \tag{3.5}$$

For $\vartheta = 180°$ we have the kinetic energy against the direction of motion

$$T_{kin_{ad}} = mc^2\left[\ln\left|1+\frac{v}{c}\right| - \frac{\dfrac{v}{c}}{1+\dfrac{v}{c}}\right] \tag{3.6}$$

If $0 < \dfrac{v}{c} = x \ll 1$ (i.e. $v \ll c$)

utilizing the series $\dfrac{\ln(1 \pm x)}{(1 \pm x)^{-1}}$

the equations (3.5) and (3.6) will be changed in the equation $T_{kin_{ad}} = T_{kin_{id}} = \dfrac{1}{2} m v^2$

complying with the Newton's mechanics. In Table 2 the values of the kinetic energy are

$T_{kin_{ad}}$, $T_{kin_{id}}$. The total energy according to Einstein $\dfrac{m_0 c^2}{\sqrt{1 - \dfrac{v^2}{c^2}}}$.

Table 2. Calculation of the kinetic energy T_{kin} of a body moving at the velocity of v according to Vlcek and according to Einstein

v/c	Vlcek ´s theory - **kinetic energy** against direction of motion as wave $T_{kin\,ad} =$ $mc^2[ln\,|1+v/c|- (v/c)/(1+v/c)]$	Vlcek ´s theory – **kinetic energy** in direction of motion as particle $T_{kin\,id} =$ $mc^2[ln\,|1-v/c|+ (v/c)/(1-v/c)]$	Vlcek ´s theory $m = m_0 = const$ $(T_{k\,ad} + T_{k\,id})/2$	Einstein ´s theory $T_{kin} =$ $mc^2 - m_0\,c^2$
0.1	$0.00439\ mc^2$	$0.0057\ mc^2$	$0.0050\ m\,c^2$	$0.0050\ m\,c^2$
0.2	$0.0156\ mc^2$	$0.0268\ mc^2$	$0.0212\ m\,c^2$	$0.0200\ m\,c^2$
0.3	$0.0316\ mc^2$	$0.0719\ mc^2$	$0.0517\ m\,c^2$	$0.0480\ m\,c^2$
0.4	$0.0508\ mc^2$	$0.1558\ mc^2$	$0.1033\ m\,c^2$	$0.0910\ m\,c^2$
0.5	$0.0722\ mc^2$	$0.3068\ mc^2$	$0.1895\ m\,c^2$	$0.1550\ m\,c^2$
0.6	$0.0950\ mc^2$	$0.5837\ mc^2$	$0.3393\ m\,c^2$	$0.2500\ m\,c^2$
0.7	$0.1174\ mc^2$	$1.1293\ mc^2$	$0.6233\ m\,c^2$	$0.4010\ m\,c^2$
0.8	$0.1434\ mc^2$	$2.3905\ mc^2$	$1.2669\ m\,c^2$	$0.6670\ m\,c^2$
0.9	$0.1680\ mc^2$	$6.6974\ mc^2$	$3.4327\ m\,c^2$	$1.2930\ m\,c^2$
0.99	$0.1906\ mc^2$	$94.3948\ mc^2$	$47.294\ m\,c^2$	$6.9200\ m\,c^2$
1.0	$0.1931\ mc^2$	infinite	infinite	infinite

Direct measurement of the speed in the experiments Kirchner[3], [4], Perry, Chaffee [5]

For v/c = 0.08-0.27 can not yet prove the validity of Vlcek's theory[2] or Einstein's theory[1].

Consequence.

The main differences between incompetent Einstein's theory[1] and the latest knowledge[2] are:
1. Form of Intensity of the Moving Charge Electric Field is asymmetrical,
2. Form of the interference field is non-linear,
3. Kinetic energy of a charge moving at the velocity of v has two different values:
Kinetic energy of electron , (proton)
Tkin id =mc2 [ln |1-v/c|+ (v/c) / (1-v/c)]   in direction of motion of electron, (proton)

where v is velocity of electron, (proton).
Kinetic energy of electron , (proton)
Tkin ad = mc2 [ln |1+v/c|- (v/c) / (1+v/c)]   against direction of motion of electron, (proton)
where v is velocity of electron, (proton).
These are the main differences between incompetent Einstein's theory and the latest knowledge.

Vlcek simplifies knowledge in physics:
Baryons (and mesons) are protons (or alpha particles) with different speeds.
In direction of motion of the proton (or alpha particle) = baryon,
against the direction of motion of the proton (or alpha particle) = meson.
Leptons (and neutrinos) are electrons with different speeds .
In direction of motion of the electron = lepton,
against the direction of motion of the electron = neutrino.
Consider the experiments at CERN and particle decay mode see [9] , [10] and [11].

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