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Unified Absolute Relativity Kinematics

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Abstract – The Unified Absolute Relativity Theory is verified by several theoretical results that happen to be equal to the known experimental values.

The UAR Kinematics is the ultimate test of the theory, as classical relativity results in particle accelerators which are always maintained valid by an arbitrary "missing mass" value.

UART general Lorentz's equations

$$\begin{cases} x = \dfrac{x_0\left(1 - v^2 \sin^2 \alpha / c^2\right) + v t_0 \cos\alpha}{\sqrt{1 - v^2/c^2}} \\ t = \dfrac{t_0 + v x_0 \cos\alpha / c^2}{\sqrt{1 - v^2/c^2}} \end{cases}$$

For $\alpha = 90^\circ$ $\Leftrightarrow$ $\begin{cases} x = x_0\sqrt{1 - v^2/c^2} \\ t = t_0 / \sqrt{1 - v^2/c^2} \end{cases}$ $\Leftrightarrow$ $xt = x_0 t_0 = A$ (constant)

$$w = x/t \quad \text{and} \quad f = 1/t \quad \Leftrightarrow \quad w = Af^2$$

$$E = mw^2 \quad \text{and} \quad E = hf \quad \Leftrightarrow \quad mw^2 = hf \quad \Leftrightarrow$$

$$\Leftrightarrow \quad f^3 = h / mA^2 \quad \text{and} \quad f_0^{\,2} = h / m_0 A^2$$

As $f = f_0\sqrt{1 - v^2/c^2}$ $\Leftrightarrow$ $\underline{m = m_0 / \left(1 - v^2/c^2\right)^{3/2}}$

$$w = x/t \quad \Leftrightarrow \quad w = \frac{x_0\left(1 - v^2/c^2\right)}{t_0} \quad \Leftrightarrow \quad \underline{w = w_0\left(1 - v^2/c^2\right)}$$

$$E = mw^2 \quad \Leftrightarrow \quad E = \frac{m_0}{\left(1 - v^2/c^2\right)^{3/2}} w_0^{\,2}\left(1 - v^2/c^2\right)^2 \quad \Leftrightarrow$$

$$\Leftrightarrow \qquad \underline{E = E_0\sqrt{1-v^2/c^2}} \qquad \text{with} \qquad E_0 = m_0 {w_0}^2$$

$$\left(The..wrong..Einstein's..formula..is:..E = \frac{E_0}{\sqrt{1-v^2/c^2}} \right)$$

Kinetic energy

$$E_k = E - E_0 \qquad \Leftrightarrow \qquad E_k = -\frac{m_0 {w_0}^2 v^2}{c\left(c+\sqrt{c^2-v^2}\right)}$$

For $w_0 \approx c$ and $v << c$: $\qquad E_k = -\frac{1}{2} m_0 v^2$

For a photon of low frequency, $w_0 \approx c$ and $v = c$: $\qquad E_k = -m_0 c^2$

$$\left(Wrong..Einstein's..formula:..E_k = \frac{m_0 c^2 v^2}{\sqrt{c^2-v^2}\left(c+\sqrt{c^2-v^2}\right)} \right)$$

Momentum

$$p = mv \qquad \Leftrightarrow \qquad p = \frac{m_0 v}{\left(1-v^2/c^2\right)^{3/2}}$$

$$\left(Wrong..Einstein's..formula:..p = \frac{m_0 vc}{\sqrt{c^2-v^2}} \right)$$

Rest mass calculation from kinetic energy and momentum

$${w_0}^2 = h\frac{-h \pm \sqrt{h^2 + 4k{m_0}^2 c^2}}{2k{m_0}^2}$$

+ -- electrical particles; - -- neutral particles

$$\begin{cases} p = \dfrac{m_0 c^3 v}{\left(c^2 - v^2\right)^{3/2}} \\ E_k = -\dfrac{m_0 {w_0}^2 v^2}{c\left(c + \sqrt{c^2 - v^2}\right)} \end{cases} \Leftrightarrow$$

$$\Leftrightarrow \qquad p^2\left(m_0 {w_0}^2 + E_k\right)^6 = -E_k c^2 {m_0}^6 {w_0}^8 \left(E_k + 2m_0 {w_0}^2\right) \qquad \Leftrightarrow$$

$$\Leftrightarrow \quad \sqrt{k}\, {w_0}^4 p^2 \left(h\sqrt{c^2 - {w_0}^2} + E_k\sqrt{k}\right)^6 = -E_k c^2 h^6 \left(c^2 - {w_0}^2\right)^3 \left(E\sqrt{k} + 2h\sqrt{c^2 - {w_0}^2}\right)$$

Example for the proton: $m_0 = 1.6726311 \times 10^{-27}$; $w_0 = 3.77533044 \times 10^7$

With $v = 0.5c$

Quick Basic programme

```
c = 299792458
h = 6.62607554E-34
k = 6.832685E-27
p = 3.86010377E-19
E = -3.19398273E-13
w = 4E+7
FOR n=1 TO 10000 STEP 1
W=(-E*c^2*h^6*(c^2-w^2)^3*(E*k^.5+2*h*(c^2-
w^2)^.5)/(k^.5*p^2*(h*(c^2-w^2)^.5+E*k^.5)^6))^(1/4)
PRINT w
NEXT n
```

Wrong Einstein's mass:

$$m_{0B} = \frac{c^2 p^2 - {E_k}^2}{2Ec^2} = 2.33255607 \times 10^{-25}\, kg$$

Correct mass:

$$m_{0A} = 1.67 \times 10^{-27}$$

Missing mass calculated = $\underline{m_{0B} - m_{0A} = 1.98 \times 10^{-25}\, kg}$

For the proton-antiproton reaction:

Missing energy per particle $\approx 35 GeV = 6.24 \times 10^{-26}\, kg$

Total missing mass $\underline{\approx 1.25 \times 10^{-25}\, kg}$

It’s obvious that the “missing mass” in particle colliders is the difference between the true total mass and the mass calculated by the wrong Einstein’s formulas.