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Armenian Theory of Special Relativity © (Illustrated)

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ABSTRACT

The aim of this current article is to illustrate in detail Armenian relativistic formulas and compare them with Lorentz relativistic formulas so that readers can easily differentiate these two theories and visualize how general and rich our Armenian Theory of Special Relativity really is with a spectacular build in asymmetry. Then we are going behind this comparison and illustrating that build in asymmetry inside Armenian Theory of Special Relativity is reincarnating the aether as a universal reference medium, which is not contrary to relativity theory. We mathematically prove the existence of aether and we show how to extract infinite energy from the time-space or sub-atomic aether medium. Our theory explains all these facts and peacefully brings together followers of absolute aether theory, relativistic aether theory or followers of dark matter theory. We also mention that the absolute aether medium has a very complex geometric character, which has never been seen before. We are explaining why NASA's earlier "BPP" and DARPA's "Casimir Effect Enhancement" programs failed. We are also stating that the time is right to reopen NASA's BPP program and fuel the spacecrafts using the everywhere existing aether asymmetric momentum force.

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Introduction

First of all we appreciate the fact that our article "Armenian Theory of Special Relativity" eventually was published in two magazines, who found it important enough to deliver our new revolutionary ideas in physics to the scientific community.

1. Inaugural Issue of IJRSTP (International Journal of Reciprocal Symmetry and Theoretical Physics), volume 1, number 1 (April-2014), by Asian Business Consortium Research House ABC.
2. "Infinite Energy" magazine on the historic 25-th anniversary of cold fusion conference, volume 20, issue 115 (May-2014), by New Energy Foundation. The magazine of new energy science and technology.

These two magazines provides a forum of debate for frontier science and that's why our article "Armenian Theory of Special Relativity" has been published in its proper places where scientists can discuss new derived generalized Lorentz-Poincare relativistic theory with new amazing relativistic formulas and find a way to harness infinite energy from time-space continuum or more precisely from the anther as a hidden sub-quantum medium.

The aim of this current article is to illustrate in detail Armenian relativistic formulas and compare them with Lorentz relativistic formulas so that readers can easily differentiate these two theories and visualize how general and rich our Armenian Theory of Special Relativity really is with a spectacular build in asymmetry.

It is worth to mention also that Lorentz transformation equations and all other Lorentz relativistic formulas can be obtained from the Armenian Theory of Special Relativity as a particular case, by substituting $s = 0$ and $g = -1$.

NASA's earlier program (between 1996 and 2003 years) called "Breakthrough Propulsion Physics" failed because they didn't have correct relativistic formulas. The same happened with DARPA's "Casimir Effect Enhancement program" when trying to harness the Casimir force in a vacuum and using that energy to power a propulsion system. They didn't succeed either because of the same reason - they did not have correct quantum mechanics theory and equations.

The time is right to reopen NASA's BPP program, but this time using our everywhere existing aether momentum force.

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In our humble opinion, using Armenian Theory of Special Relativity and it's promising relativistic formulas - all that work can be done within two to three years, which will bring forth the dawn of a new technological era.

That's why It is our pleasure to inform the scientific community at large, that in our main research-manuscript we have succeeded to build a mathematically solid theory of special relativity in one dimensional space and derive new transformation equations and many other new fascinating relativistic formulas, which are an unambiguous generalization of the Lorentz transformation equations and all other Lorentz relativistic formulas. Our article is the accumulation of all efforts from mathematicians and physicists to build a more general transformation equations of relativity in one dimension.

Our published manuscript creates a paradigm for advance studies in relativistic kinematics and dynamics. The crown jewel of the Armenian Theory of Special Relativity is Armenian energy and momentum formulas, which the world has never seen before. Our Armenian theory has unpredictable applications in applied physics. Such as, by manipulating the time-space numerical constants s and g (particularly in chemical or in thermal environment) we can obtain numerous mind blowing practical results, including a theoretical pointer of how to harness infinite energy from time-space continuum and how to use rest particle asymmetric momentum formula to do it.

Our manuscript would be of interest to a broad readership including those who are interested in theoretical aspects of teleportation, time travel, antigravitation, free energy and much more...

The time has come to reincarnate the aether as a universal reference medium which is not contrary to relativity theory, because for aether inertial system the asymmetric coefficient just equals zero $(s = 0)$. And our theory explains all these facts and peacefully brings together followers of absolute aether theory, relativistic aether theory or followers of dark matter theory. We just need to mention that the absolute aether medium has a very complex geometric character, which has never been seen before.

Armenian Theory of Relativity differs from all other cold fusion researchers theories by not constructing some artificial formulas to explain the innumerous infinite energy experimental results. We instead succeeded on building a beautiful theory of relativity (in one dimension) and accordingly received many very important new formulas. Finally we mathematically proved the existence of universal aether inertial system and Armenian relativistic formulas need to guide all bright experimentators on the journey of how to extract infinite energy from the time-space or sub-atomic aether medium.

The time is right to say that 100 years of inquisition in physics is now over and Aether Energy Age has begun!

Legend of the Used Symbols

- *Fundamental physical quantities*

t	✍	time coordinate notation
x	✍	space coordinate notation
$\mathscr{e}\mathscr{T}$	✍	general scalar quantity notation
A	✍	general vector quantity notation
$m_{Ð0}$ and m_{L0}	✍	Armenian and Lorentz rest masses
m and $m^{❖}$	✍	masses of the moving particle m_0

- *Direct and reciprocal relative velocity notations*

v	✍	velocity $K^{❖}$ inertial system respect to the K inertial system
$v^{❖}$	✍	velocity K inertial system respect to the $K^{❖}$ inertial system
u	✍	velocity $K^{❈}$ inertial system respect to the $K^{❖}$ inertial system
$u^{❖}$	✍	velocity $K^{❖}$ inertial system respect to the $K^{❈}$ inertial system
w	✍	velocity $K^{❈}$ inertial system respect to the K inertial system
$w^{❖}$	✍	velocity K inertial system respect to the $K^{❈}$ inertial system

- *Acceleration notations*

- a, $a_{Ð}$ and a_L − accelerations of the particle in the K inertial system
- b, $b_{Ð}$ and b_L − accelerations of the particle in the K' inertial system

- *Derived physical quantities*

- $\mathbf{O}_{Ð}$ and $\mathbf{O}_L$ − Armenian and Lorentz Lagrangian notations
- $E_{Ð}$ and E_L − Armenian and Lorentz energy notations
- $P_{Ð}$ and P_L − Armenian and Lorentz momentum notations
- $F_{Ð}$ and F_L − Armenian and Lorentz force notations
- E_G and P_G − Galilean energy and momentum notations
- $\overset{\swarrow}{✡}_{Ð}$ and $\overset{\swarrow}{✡}_L$ − Armenian and Lorentz transformation matrixes
- $\overset{\swarrow}{\mathbf{h}}_{Ð}$ and $\overset{\swarrow}{\mathbf{h}}_L$ − Armenian and Lorentz mirroring matrixes

- *Mirror reflection notations for physical quantities*

- $\overset{*}{t}$ − mirror reflection of the time quantity t
- $\overset{*}{x}$ − mirror reflection of the space quantity x
- $\overset{*}{w} \equiv w'$ − mirror velocity equals reciprocal velocity
- $\overset{*}{℮τ}$ − mirror reflection of the scalar quantity $℮τ$
- $\overset{*}{A}$ − mirror reflection of the vector quantity A
- $\overset{*}{a}$, $\overset{*}{a}_{Ð}$ and $\overset{*}{a}_L$ − mirror reflections of the accelerations a, $a_{Ð}$ and a_L
- $\overset{*}{F}_{Ð}$ and $\overset{*}{F}_L$ − mirror reflections of the forces $F_{Ð}$ and F_L
- $\overset{*}{E}_{Ð}$ and $\overset{*}{E}_L$ − mirror reflections of the energies $E_{Ð}$ and E_L
- $\overset{*}{P}_{Ð}$ and $\overset{*}{P}_L$ − mirror reflections of the momentums $P_{Ð}$ and P_L

Comparison Armenian and Lorentz Relativistic Formulas

Time-Space Mirror Transformation Equations [2]

Armenian transformations and Lorentz transformations

$$\begin{cases} \overset{*}{t} = t + \frac{1}{c} s x \\ \overset{*}{x} = -x \end{cases} \quad \text{and} \quad \begin{cases} \overset{*}{t} = t \\ \overset{*}{x} = -x \end{cases}$$

Time-Space Transformation Equations Between Moving Inertial Systems [4]

- *Direct transformations*

Armenian transformations and Lorentz transformations

$$\begin{cases} t' = \gamma_{Ð}\left[\left(1 + s\frac{v}{c}\right)t + g\frac{v}{c^2}x\right] \\ x' = \gamma_{Ð}(x - vt) \end{cases} \quad \text{and} \quad \begin{cases} t' = \gamma_L\left(t - \frac{v}{c^2}x\right) \\ x' = \gamma_L(x - vt) \end{cases}$$

- *Inverse transformations*

Armenian transformations and Lorentz transformations

$$\begin{cases} t = \gamma_A(v')\left[\left(1 + s\dfrac{v'}{c}\right)t' + g\dfrac{v'}{c^2}x'\right] \\ x = \gamma_A(v')\left(x' - v't'\right) \end{cases} \quad \text{and} \quad \begin{cases} t = \gamma_L(v')\left(t' - \dfrac{v'}{c^2}x'\right) \\ x = \gamma_L(v')\left(x' - v't'\right) \end{cases}$$

General Scalar-Vector $(\varphi, \mathbf{A})$ Mirror Transformation Equations

Armenian transformations and Lorentz transformations

$$\begin{cases} \overset{*}{\varphi} = \varphi + sA \\ \overset{*}{A} = -A \end{cases} \quad \text{and} \quad \begin{cases} \overset{*}{\varphi} = \varphi \\ \overset{*}{A} = -A \end{cases}$$

General Scalar-Vector $(\varphi, \mathbf{A})$ Transformation Equations Between Moving Inertial Systems

- *Direct transformations*

Armenian transformations and Lorentz transformations

$$\begin{cases} \varphi' = \gamma_A(v)\left[\left(1 + s\dfrac{v}{c}\right)\varphi + g\dfrac{v}{c}A\right] \\ A' = \gamma_A(v)\left(A - \dfrac{v}{c}\varphi\right) \end{cases} \quad \text{and} \quad \begin{cases} \varphi' = \gamma_L(v)\left(\varphi - \dfrac{v}{c}A\right) \\ A' = \gamma_L(v)\left(A - \dfrac{v}{c}\varphi\right) \end{cases}$$

- *Inverse transformations*

Armenian transformations and Lorentz transformations

$$\begin{cases} \varphi = \gamma_A(v')\left[\left(1 + s\dfrac{v'}{c}\right)\varphi' + g\dfrac{v'}{c}A'\right] \\ A = \gamma_A(v')\left(A' - \dfrac{v'}{c}\varphi'\right) \end{cases} \quad \text{and} \quad \begin{cases} \varphi = \gamma_L(v')\left(\varphi' - \dfrac{v'}{c}A'\right) \\ A = \gamma_L(v')\left(A' - \dfrac{v'}{c}\varphi'\right) \end{cases}$$

Mirror Transformation Matrixes

Armenian mirroring matrix and Lorentz mirroring matrix

$$\overleftarrow{M}_A = \begin{bmatrix} 1 & s \\ 0 & -1 \end{bmatrix} \quad \text{and} \quad \overleftarrow{M}_L = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$$

General Scalar-Vector $(\varphi, \mathbf{A})$ Relative Movement Transformation Matrixes

Armenian transformation matrix and Lorentz transformation matrix

$$\overleftarrow{L}_A = \gamma_A(v)\begin{bmatrix} 1 + s\dfrac{v}{c} & g\dfrac{v}{c} \\ -\dfrac{v}{c} & 1 \end{bmatrix} = \gamma_A(v')\begin{bmatrix} 1 & -g\dfrac{v'}{c} \\ \dfrac{v'}{c} & 1 + s\dfrac{v'}{c} \end{bmatrix} \quad \text{and} \quad \overleftarrow{L}_L = \gamma_L(v)\begin{bmatrix} 1 & -\dfrac{v}{c} \\ -\dfrac{v}{c} & 1 \end{bmatrix}$$

Relation Between Reciprocal and Direct Relative Velocities (5)

Armenian relations and Lorentz relation

$$\begin{cases} v' = -\dfrac{v}{1 + s\dfrac{v}{c}} \\ v = -\dfrac{v'}{1 + s\dfrac{v'}{c}} \end{cases} \quad \text{and} \quad v' = -v$$

For both relations in (4) true the following transformation:

$$(v')' = v$$

Gamma Function Formulas (6)

Armenian gamma functions and Lorentz gamma function

$$\begin{cases} \gamma_A(v) = \dfrac{1}{\sqrt{1 + s\dfrac{v}{c} - g\dfrac{v^2}{c^2}}} > 0 \\ \gamma_A(v') = \dfrac{1}{\sqrt{1 + s\dfrac{v'}{c} - g\dfrac{v'^2}{c^2}}} > 0 \end{cases} \quad \text{and} \quad \gamma_L(v') = \gamma_L(v) = \dfrac{1}{\sqrt{1 - \dfrac{v^2}{c^2}}} > 0$$

Gamma Functions Properties (7)

Armenian properties and Lorentz properties

$$\begin{cases} v'\gamma_A(v') = -v\gamma_A(v) \\ \gamma_A(v') = \gamma_A(v)\left(1 + s\dfrac{v}{c}\right) > 0 \\ \gamma_A(v')\left(1 + \dfrac{1}{2}s\dfrac{v'}{c}\right) = \gamma_A(v)\left(1 + \dfrac{1}{2}s\dfrac{v}{c}\right) \end{cases} \quad \text{and} \quad \begin{cases} v'\gamma_L(v') = -v\gamma_L(v) \\ \gamma_L(v') = \gamma_L(v) > 0 \end{cases}$$

Invariant Interval Formulas (8)

$$\begin{cases} \textit{Armenian interval formula} \Rightarrow \tau^2 = (ct')^2 + s(ct')x' - gx'^2 = (ct)^2 + s(ct)x - gx^2 > 0 \\ \textit{Lorentz interval formula} \Rightarrow \tau^2 = (ct')^2 - x'^2 = (ct)^2 - x^2 > 0 \end{cases}$$

Addition of Velocities and Gamma Function Transformations (10)

Armenian transformations and Lorentz transformations

$$\begin{cases} w = u \oplus v = \dfrac{u + v + s\dfrac{vu}{c}}{1 - g\dfrac{vu}{c^2}} \\ \gamma_A(w) = \gamma_A(v)\gamma_A(u)\left(1 - g\dfrac{vu}{c^2}\right) \end{cases} \quad \text{and} \quad \begin{cases} w = u \oplus v = \dfrac{u + v}{1 + \dfrac{vu}{c^2}} \\ \gamma_L(w) = \gamma_L(v)\gamma_L(u)\left(1 + \dfrac{vu}{c^2}\right) \end{cases}$$

Subtraction of Velocities and Gamma Function Transformations (10)

Armenian transformations and Lorentz transformations

$$\begin{cases} u = w \ominus v = \dfrac{w - v}{1 + s\dfrac{v}{c} + g\dfrac{vw}{c^2}} \\ \gamma_{Ð}(u) = \gamma_{Ð}(v)\gamma_{Ð}(w)\left(1 + s\dfrac{v}{c} + g\dfrac{vw}{c^2}\right) \end{cases} \quad \text{and} \quad \begin{cases} u = w \ominus v = \dfrac{w - v}{1 - \dfrac{vw}{c^2}} \\ \gamma_{L}(u) = \gamma_{L}(v)\gamma_{L}(w)\left(1 - \dfrac{vw}{c^2}\right) \end{cases}$$

Time and Length Changes Respect K Inertial System $(9)^{1}$

Armenian changes and Lorentz changes

$$\begin{cases} t = \gamma_{Ð}(v)t_0 = \dfrac{t_0}{\sqrt{1 + s\dfrac{v}{c} + g\dfrac{v^2}{c^2}}} \\ l = \dfrac{l_0}{\gamma_{Ð}(v)} = l_0\sqrt{1 + s\dfrac{v}{c} + g\dfrac{v^2}{c^2}} \end{cases} \quad \text{and} \quad \begin{cases} t = \gamma_{L}(v)t_0 = \dfrac{t_0}{\sqrt{1 - \dfrac{v^2}{c^2}}} \\ l = \dfrac{l_0}{\gamma_{L}(v)} = l_0\sqrt{1 - \dfrac{v^2}{c^2}} \end{cases}$$

Time and Length Changes Respect K' Inertial System $(9)^{1}$

Armenian changes and Lorentz changes

$$\begin{cases} t' = \gamma_{Ð}(v')t_0 = \dfrac{t_0}{\sqrt{1 + s\dfrac{v'}{c} + g\dfrac{v'^2}{c^2}}} \\ l' = \dfrac{l_0}{\gamma_{Ð}(v')} = l_0\sqrt{1 + s\dfrac{v'}{c} + g\dfrac{v'^2}{c^2}} \end{cases} \quad \text{and} \quad \begin{cases} t' = \gamma_{L}(v)t_0 = \dfrac{t_0}{\sqrt{1 - \dfrac{v^2}{c^2}}} \\ l' = \dfrac{l_0}{\gamma_{L}(v)} = l_0\sqrt{1 - \dfrac{v^2}{c^2}} \end{cases}$$

Surpluses (Residues) of the Time and Length Changes

Armenian surpluses and Lorentz surpluses

$$\begin{cases} \Delta(t)_{Ð} = t' - t = s\dfrac{v}{c}t = -s\dfrac{v'}{c}t' \\ \Delta(l)_{Ð} = l - l' = s\dfrac{v}{c}l' = -s\dfrac{v'}{c}l \end{cases} \quad \text{and} \quad \begin{cases} \Delta(t)_{L} = 0 \\ \Delta(l)_{L} = 0 \end{cases}$$

Accelerations Mirror Transformation Equations

Armenian transformations and Lorentz transformation

$$\begin{cases} \overset{*}{a} = -\dfrac{1}{\left(1 + s\dfrac{w}{c}\right)^3}a \\ a = -\dfrac{1}{\left(1 + s\dfrac{w'}{c}\right)^3}\overset{*}{a} \end{cases} \quad \text{and} \quad \overset{*}{a} = -a$$

Acceleration Transformation Equations Between Moving Inertial Systems (6)

Armenian transformations and Lorentz transformations

$$\begin{cases} b = \dfrac{1}{\gamma_{Đ}^{3}(v)\left(1+\sigma\dfrac{v}{c}+g\dfrac{vw}{c^2}\right)^3}a \\ a = \dfrac{1}{\gamma_{Đ}^{3}(v)\left(1-g\dfrac{vu}{c^2}\right)^3}b \end{cases} \quad \text{and} \quad \begin{cases} b = \dfrac{1}{\gamma_{L}^{3}(v)\left(1-\dfrac{vw}{c^2}\right)^3}a \\ a = \dfrac{1}{\gamma_{L}^{3}(v)\left(1+\dfrac{vu}{c^2}\right)^3}b \end{cases}$$

New Accelerations Definitions (7)

Armenian accelerations and Lorentz accelerations

$$\begin{cases} a_{Đ} = \gamma_{Đ}^{3}(w)\,a = \gamma_{Đ}^{3}(u)\,b \\ \overset{*}{a}_{Đ} = -\gamma_{Đ}^{3}(w^{*})\,\overset{*}{a} = -\gamma_{Đ}^{3}(u^{*})\,\overset{*}{b} \end{cases} \quad \text{and} \quad \begin{cases} a_{L} = \gamma_{L}^{3}(w)\,a = \gamma_{L}^{3}(u)\,b \\ \overset{*}{a}_{L} = -\gamma_{L}^{3}(w^{*})\,\overset{*}{a} = -\gamma_{L}^{3}(u^{*})\,\overset{*}{b} \end{cases}$$

New Accelerations Properties

Armenian properties and Lorentz properties

$$\begin{cases} \overset{*}{a}_{Đ} = -a_{Đ} \\ \left|\overset{*}{a}_{Đ}\right| = \left|a_{Đ}\right| \end{cases} \quad \text{and} \quad \begin{cases} \overset{*}{a}_{L} = -a_{L} \\ \left|\overset{*}{a}_{L}\right| = \left|a_{L}\right| \end{cases}$$

Lagrangian Functions For Free Moving Particle (8)

Armenian Lagrangian and Lorentz Lagrangian

$$L_{Đ}(w) = -m_0c^2\sqrt{1+\sigma\frac{w}{c}+g\frac{w^2}{c^2}} \quad \text{and} \quad L_{L}(w) = -m_0c^2\sqrt{1-\frac{w^2}{c^2}}$$

Lagrangian Functions Mirror Transformation Equations

Armenian transformations and Lorentz transformations

$$\begin{cases} L_{Đ}(w^{*}) = \dfrac{L_{Đ}(w)}{1+\sigma\dfrac{w}{c}} \\ L_{Đ}(w) = \dfrac{L_{Đ}(w^{*})}{1+\sigma\dfrac{w^{*}}{c}} \end{cases} \quad \text{and} \quad \begin{cases} L_{L}(w^{*}) = L_{L}(w) \\ L_{L}(w) = L_{L}(w^{*}) \end{cases}$$

Lagrangian Function Transformation Equations Between Moving Inertial Systems

Armenian Transformations and Lorentz Transformations

$$\begin{cases} L_{Đ}(u) = \dfrac{\sqrt{1+\sigma\dfrac{v}{c}+g\dfrac{v^2}{c^2}}}{1+\sigma\dfrac{v}{c}+g\dfrac{vw}{c^2}}L_{Đ}(w) \\ L_{Đ}(w) = \dfrac{\sqrt{1+\sigma\dfrac{v}{c}+g\dfrac{v^2}{c^2}}}{1-g\dfrac{vu}{c^2}}L_{Đ}(u) \end{cases} \quad \text{and} \quad \begin{cases} L_{L}(u) = \dfrac{\sqrt{1-\dfrac{v^2}{c^2}}}{1-\dfrac{vw}{c^2}}L_{L}(w) \\ L_{L}(w) = \dfrac{\sqrt{1-\dfrac{v^2}{c^2}}}{1+\dfrac{vu}{c^2}}L_{L}(u) \end{cases}$$

Free Moving Particle Energy and Momentum Formulas [9]

(*The Crown Jewel of the Armenian Theory of Relativity*)

Armenian formulas

$$\begin{cases} E_{Ð}(w) = \dfrac{1+\frac{1}{2}\sigma\frac{w}{c}}{\sqrt{1+\sigma\frac{w}{c}+\gamma\frac{w^2}{c^2}}}m_0c^2 \\ P_{Ð}(w) = -\dfrac{\gamma\frac{w}{c}+\frac{1}{2}\sigma}{\sqrt{1+\sigma\frac{w}{c}+\gamma\frac{w^2}{c^2}}}m_0c \end{cases}$$

and

Lorentz formulas

$$\begin{cases} E_L(w) = \dfrac{1}{\sqrt{1-\frac{w^2}{c^2}}}m_0c \\ P_L(w) = \dfrac{1}{\sqrt{1-\frac{w^2}{c^2}}}m_0w \end{cases}$$

Energy and Momentum Transformation Equations Between Moving Inertial Systems [4]

- *Direct transformations*

Armenian transformations

$$\begin{cases} E'_{Ð} = \gamma_{Ð}(v)\left(E_{Ð} - vP_{Ð}\right) \\ P'_{Ð} = \gamma_{Ð}(v)\left[\left(1+\sigma\frac{v}{c}\right)P_{Ð} + \gamma\frac{v}{c^2}E_{Ð}\right] \end{cases}$$

and

Lorentz Transformations

$$\begin{cases} E'_L = \gamma_L(v)\left(E_L - vP_L\right) \\ P'_L = \gamma_L(v)\left(P_L - \frac{v}{c^2}E_L\right) \end{cases}$$

- *Inverse Transformations*

Armenian transformations

$$\begin{cases} E_{Ð} = \gamma_{Ð}(v')\left(E'_{Ð} - v'P'_{Ð}\right) \\ P_{Ð} = \gamma_{Ð}(v')\left[\left(1+\sigma\frac{v'}{c}\right)P'_{Ð} + \gamma\frac{v'}{c^2}E'_{Ð}\right] \end{cases}$$

and

Lorentz Transformations

$$\begin{cases} E_L = \gamma_L(v)\left(E'_L + vP'_L\right) \\ P_L = \gamma_L(v)\left(P'_L + \frac{v}{c^2}E'_L\right) \end{cases}$$

Invariant (or Full) Energy-Momentum Formulas [5]

- *Armenian invariant energy-momentum formula*

$$\left(P_{Ð}\right)^2 + \sigma P_{Ð}\left(\frac{E_{Ð}}{c}\right) + \gamma\left(\frac{E_{Ð}}{c}\right)^2 = \left(P'_{Ð}\right)^2 + \sigma P'_{Ð}\left(\frac{E'_{Ð}}{c}\right) + \gamma\left(\frac{E'_{Ð}}{c}\right)^2 = \left(\gamma - \tfrac{1}{4}\sigma^2\right)\left(m_0c\right)^2 > 0$$

- *Lorentz invariant energy-momentum formula*

$$\left(\frac{E_L}{c}\right)^2 - \left(P_L\right)^2 = \left(\frac{E'_L}{c}\right)^2 - \left(P'_L\right)^2 = \left(m_0c\right)^2 > 0$$

Energy and Momentum Mirror Reflection Formulas

Armenian formulas

$$\begin{cases} \overset{*}{E}_{Ð} = E_{Ð} \\ \overset{*}{P}_{Ð} + P_{Ð} = -\sigma\frac{1}{c}E_{Ð} \end{cases}$$

and

Lorentz formulas

$$\begin{cases} \overset{*}{E}_L = E_L \\ \overset{*}{P}_L + P_L = 0 \end{cases}$$

Time and length change formulas in (1) and (2) was derived in our manuscript, therefore they're correct. We have not yet succeeded in deriving the correct formula for representing a moving particles mass change, therefore we need to decide which formula of mass change is a more proper choice, until we find the way to derive it or make an experiment to find the right formula. There are three logical choices: first choice is to go the legacy relativity way and the other two choices follows directly from the Armenian energy and momentum formulas. All those three choices can be seen below:

$$\begin{cases} 1)\ \text{Legacy relativity way} & \Rightarrow \quad m = \gamma_A(w)\, m_0 \\ 2)\quad E_A = mc^2 & \Rightarrow \quad m = \dfrac{E_A}{c^2} = \gamma_A(w)\left(1 + \frac{1}{2} s \frac{w}{c}\right) m_0 \\ 3)\quad P_A = mw & \Rightarrow \quad m = \dfrac{P_A}{w} = -\gamma_A(w)\left(\dfrac{g \frac{w}{c} + \frac{1}{2} s}{\frac{w}{c}}\right) m_0 \end{cases}$$

We need to analyze these three choices separately and then calculate the mass surpluses for these three cases.

For legacy relativity, all these three cases coincide with each other and therefore, there is no contradiction at all.

Mass Changes Respect K and K' Inertial Systems [9]

1) *First choice*

Armenian changes of the moving mass m_0

$$\begin{cases} m = \gamma_A(w)\, m_0 = \dfrac{m_0}{\sqrt{1 + s\frac{w}{c} + g\frac{w^2}{c^2}}} \\ m' = \gamma_A(w')\, m_0 = \dfrac{m_0}{\sqrt{1 + s\frac{w'}{c} + g\frac{w'^2}{c^2}}} \end{cases}$$

and

Lorentz changes of the moving mass m_0

$$\begin{cases} m = \gamma_L(w)\, m_0 = \dfrac{m_0}{\sqrt{1 - \frac{w^2}{c^2}}} \\ m' = \gamma_L(w')\, m_0 = \dfrac{m_0}{\sqrt{1 - \frac{w^2}{c^2}}} \end{cases}$$

Surpluses of the mass for this case

Armenian surplus

$$(\Delta m)_A = m' - m = s\frac{w}{c} m = -s\frac{w'}{c} m'$$

and

Lorentz surplus

$$(\Delta m)_L = m' - m = 0$$

1) *Second choice*

Armenian changes of the moving mass m_0

$$\begin{cases} m = \gamma_A(w)\left(1 + \frac{1}{2} s \frac{w}{c}\right) m_0 = \dfrac{1 + \frac{1}{2} s \frac{w}{c}}{\sqrt{1 + s\frac{w}{c} + g\frac{w^2}{c^2}}}\, m_0 \\ m' = \gamma_A(w')\left(1 + \frac{1}{2} s \frac{w'}{c}\right) m_0 = \dfrac{1 + \frac{1}{2} s \frac{w'}{c}}{\sqrt{1 + s\frac{w'}{c} + g\frac{w'^2}{c^2}}}\, m_0 \end{cases}$$

and

Lorentz changes of the moving mass m_0

$$\begin{cases} m = \gamma_L(w)\, m_0 = \dfrac{m_0}{\sqrt{1 - \frac{w^2}{c^2}}} \\ m' = \gamma_L(w)\, m_0 = \dfrac{m_0}{\sqrt{1 - \frac{w^2}{c^2}}} \end{cases}$$

Surpluses of the mass changes for this case

Armenian surplus

$$(\Delta m)_A = m' - m = 0$$

and

Lorentz surplus

$$(\Delta m)_L = m' - m = 0$$

1) *Third choice*

Armenian changes of the moving mass m_0 and Lorentz changes of the moving mass m_0

$$\begin{cases} m = -\gamma_{Ա}(w)\left(\dfrac{g\frac{w}{c}+\frac{1}{2}s}{\frac{w}{c}}\right)m_0 = -\dfrac{\left(\frac{c}{w}\right)\left(g\frac{w}{c}+\frac{1}{2}s\right)}{\sqrt{1+s\frac{w}{c}+g\frac{w^2}{c^2}}}m_0 \\ m^* = -\gamma_{Ա}(w^*)\left(\dfrac{g\frac{w^*}{c}+\frac{1}{2}s}{\frac{w^*}{c}}\right)m_0 = -\dfrac{\left(\frac{c}{w^*}\right)\left(g\frac{w^*}{c}+\frac{1}{2}\right)}{\sqrt{1+s\frac{w^*}{c}+g\frac{w^{*2}}{c^2}}}m_0 \end{cases} \quad \text{and} \quad \begin{cases} m = \gamma_L(w)m_0 = \dfrac{m_0}{\sqrt{1-\frac{w^2}{c^2}}} \\ m^* = \gamma_L(w)m_0 = \dfrac{m_0}{\sqrt{1-\frac{w^2}{c^2}}} \end{cases}$$

Surpluses of the mass changes for this case

Armenian surplus and Lorentz surplus

$$(\Delta m)_{Ա} = m^* - m = \gamma_{Ա}(w)\left(1+s\frac{w}{c}\right)\frac{\frac{1}{2}s+\left(\frac{1}{2}s^2-g\right)\frac{w}{c}}{\frac{w}{c}}m_0 \quad \text{and} \quad (\Delta m)_L = m^* - m = 0$$

The mass of the moving particle is not an important quantity anymore. The more important quantity becomes the particle's rest mass m_0 which has a real physical meaning. In Armenian Theory of Special Relativity we also define a new rest mass quantity, which is more general and can also have a negative value as well, just like a particle's charge.

Rest Mass Formulas [1]

Armenian rest mass and Lorentz rest mass

$$m_{Ա0} = -\left(g-\tfrac{1}{4}s^2\right)m_0 \lessgtr 0 \qquad \text{and} \qquad m_{L0} = m_0 > 0$$

Force Formulas [6]

Armenian force formula and Lorentz force formula

$$\begin{cases} F_{Ա} = -\left(g-\frac{1}{4}s^2\right)m_0\gamma_{Ա}(w)a = m_{Ա0}a_{Ա} \\ \overset{*}{F}_{Ա} = -\left(g-\frac{1}{4}s^2\right)m_0\gamma_{Ա}(w^*)\overset{*}{a} = m_{Ա0}\overset{*}{a}_{Ա} \end{cases} \quad \text{and} \quad \begin{cases} F_L = m_0\gamma_L(w)a = m_0 a_L \\ \overset{*}{F}_L = m_0\gamma_L(w^*)\overset{*}{a} \quad m_0\overset{*}{a}_L \end{cases}$$

Force Transformation Formulas Between Moving Inertial Systems [7]

Preserved Newton's laws: Newton's second law, Newton's third law $\Rightarrow$ Armenian formulas and Lorentz formulas

$$\begin{cases} \text{Newton's second law} \\ \text{Newton's third law} \end{cases} \Rightarrow \begin{cases} F_{Ա} = F_{Ա}^* \\ \overset{*}{F}_{Ա} = -F_{Ա} \end{cases} \quad \text{and} \quad \begin{cases} F_L = F_L^* \\ \overset{*}{F}_L = -F_L \end{cases}$$

Rest Particle Energy and Momentum Formulas Progress Chronicle [2]

Galilean formulas		Lorentz formulas		Armenian formulas
$E_G(0) = 0$	$\Rightarrow$	$E_L(0) = m_0c^2$ ⊂	$\Rightarrow$	$E_{Ա}(0) = m_0c^2$ ⊂
$P_G(0) = 0$		$P_L(0) = 0$		$P_{Ա}(0) = -\frac{1}{2}sm_0c$ ⊃

⊂ - This rest particle energy formula gives us nuclear power.

➲ - This rest particle momentum formula is the Armenium formula - gift to humanity as a clean and free energy source.

Range of Velocities of Moving Particle in the Armenian Theory of Relativity $(3, 14, 15)$

$g \setminus s$	$s < 0$	$s = 0$	$s > 0$
$g < 0$	$0 < w < w_0$	$0 < w < c\sqrt{-\frac{1}{g}}$	$0 < w < w_0$
$g = 0$	$0 < w < -\frac{1}{s}c$	$0 < w < \infty$	$0 < w < \infty$
$0 < g < \left(\frac{1}{2}s\right)^2$	$0 < w < -\frac{1}{s}c$	$0 < w < \infty$	$0 < w < \infty$
$g \geq \left(\frac{1}{2}s\right)^2$	$0 < w < -\frac{1}{s}c$	$0 < w < \infty$	$0 < w < \infty$

Conclusions

As you can see from the above comparisons of Armenian and Lorentz relativistic formulas, Armenian relativistic formulas is full of asymmetry, which is in every single formula because of coefficient asymmetry s and that asymmetry is the essence and exciting part of the Armenian Theory of Relativity. Therefore we define a brand new geometrical space - Armenian Space to satisfy Armenian Theory of Special Relativity, with very strange properties in three dimensions, such as:

$\vec{i}_{[illegible]} \cdot \vec{i}_{[illegible]} \neq \vec{i}_{[illegible]} \cdot \vec{i}_{[illegible]}$ and $\vec{i}_{[illegible]} \cdot \vec{i}_{[illegible]} = s\,\vec{i}_{[illegible]}$

Let's start analyzing the crown jewel of the Armenian Theory of Relativity - the Armenian energy and momentum formulas (31). Then we find out that the free moving particle with velocity w in the inertial system K has the following three extreme situations:

$$\begin{cases} 1)\ \text{moving particle's velocity equals zero} & - \quad w = 0 \\ 2)\ \text{moving particle's energy equals zero} & - \quad E_{Ð}(w) = 0 \\ 3)\ \text{moving particle's momentum equals zero} & - \quad P_{Ð}(w) = 0 \end{cases}$$

For these three cases (30) the particle has different velocities and accordingly, using (6), we have three different values of Armenian gamma function as shown below:

$$\begin{cases} 1)\ w = 0 & \Rightarrow \quad \gamma_{Ð}(0) = 1 \\ 2)\ w = -\frac{2}{s}c = w_1 & \Rightarrow \quad \gamma_{Ð}(w_1) = \dfrac{\frac{1}{2}s}{\sqrt{g - \frac{1}{4}s^2}} \\ 3)\ w = -\frac{1}{2}\frac{s}{g}c = w_2 & \Rightarrow \quad \gamma_{Ð}(w_2) = \dfrac{1}{\sqrt{1 - \frac{1}{4}\frac{s^2}{g}}} \end{cases}$$

Therefore using the velocity and Armenian gamma function values given by (31), we can obtain from (31) the particle's Armenian energy and momentum values for these three extreme cases:

$$\begin{cases} 1)\ E_{Ð}(0) = m_0c^2 & \text{and} \quad P_{Ð}(0) = -\frac{1}{2}sm_0c \\ 2)\ E_{Ð}(w_1) = 0 & \text{and} \quad P_{Ð}(w_1) = \left(\sqrt{g - \frac{1}{4}s^2}\right)m_0c \\ 3)\ E_{Ð}(w_2) = \left(\sqrt{1 - \frac{1}{4}\frac{s^2}{g}}\right)m_0c^2 & \text{and} \quad P_{Ð}(w_2) = 0 \end{cases}$$

How can we explain all of these strange results, which is unthinkable from the legacy physics point of view? What is really the physical meanings of the following three cases?

1) When a particle is resting in the inertial system K $(w = 0)$, but particle still has a momentum.

2) When a particle is moving at velocity w_1 with respect to the inertial system K, but it's energy equals zero.

3) When particle moves with respect to the inertial system K at velocity w_2, but this time it's momentum equal zero.

Most physicists today would view all of these bizarre results - straight results of the Armenian Theory of Relativity, as complete madness and they will say that all these facts would bring the end of physics as we know it.

Till now due to extreme dogmatism, the properties of time-space asymmetry and all physical quantities asymmetric transformations are never officially studied. The role of symmetry violations in physics is not understood by physicists.

That is where the Armenian Theory of Special Relativity comes to play, which explains all of these "impossible violations" and brings to question all physical laws of legacy hard science and demands a revision under these remarkable new circumstances.

For example, in the first case - the velocity of the particle equals zero, which means that the particle is at rest in the inertial system K, but the same particle still has momentum which is dependent on coefficient s. There is only one logical explanation - that there exists an aether medium and that the aether is silently dragging the particle back in the opposite direction of the movement inertial system K. We can harness infinite energy from that rest particle's momentum just as we are harnessing energy from the wind using a windmill.

In the same manner we can explain the third case, but the second case is a bit of a challenge.

Reference

[1] R. Nazaryan and H. Nazaryan, Armenian Theory of Special Relativity, Uniprint, Yerevan 2013

[2] R. Nazaryan and H. Nazaryan, IJRSTP, Vol. 1, Issue 1, Pages 36-42 (2014)

[3] R. Nazaryan and H. Nazaryan, Infinite Energy, Vol. 20, Issue 115, Pages 40-42 (2014)