Armenian Theory of Special Relativity

One Dimensional Movement

Armenian Transformation Equations

Direct transformations

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

and

Inverse transformations

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

Lorentz Transformation Equations

Direct transformations

$$\begin{cases} t' = \gamma(v)\left(t - \frac{v}{c^2}x\right) \\ x' = \gamma(v)(x - vt) \end{cases}$$

and

Inverse transformations

$$\begin{cases} t = \gamma(v')\left(t' - \frac{v'}{c^2}x'\right) \\ x = \gamma(v')(x' - v't') \end{cases}$$

Armenian Relations Between Reciprocal and Direct Relative Velocities

$$\begin{cases} v' = -\dfrac{v}{1 + s\dfrac{v}{c}} \\[2ex] v = -\dfrac{v'}{1 + s\dfrac{v'}{c}} \end{cases}$$

Lorentz Relation Between Reciprocal and Direct Relative Velocities

$$v' = -v$$

Armenian Gamma Functions

$$
\begin{cases}
\gamma_{\text{չ}}(v) = \dfrac{1}{\sqrt{1 + s\dfrac{v}{c} + g\dfrac{v^2}{c^2}}} \\[2ex]
\gamma_{\text{չ}}(v') = \dfrac{1}{\sqrt{1 + s\dfrac{v'}{c} + g\dfrac{v'^2}{c^2}}}
\end{cases}
$$

Lorentz Gamma Function

$$
\gamma(v') = \gamma(v) = \frac{1}{\sqrt{1 - \dfrac{v^2}{c^2}}}
$$

Armenian Formula for Time-Space Interval

$$t\imath^2 = c^2t'^2 + sct'x' + gx'^2 = c^2t^2 + sctx + gx^2$$

Lorentz Formula for Time-Space Interval

$$t\imath^2 = c^2t'^2 - x'^2 = c^2t^2 - x^2$$

Armenian Addition and Subtraction Formulas For Local Velocities

$$\begin{cases} w = \dfrac{u + v + s\dfrac{vu}{c}}{1 - g\dfrac{vu}{c^2}} \\[2em] u = \dfrac{w - v}{1 + s\dfrac{v}{c} + g\dfrac{vw}{c^2}} \end{cases}$$

Lorentz Addition and Subtraction Formulas For Local Velocities

$$\begin{cases} w = \dfrac{u + v}{1 + \dfrac{vu}{c^2}} \\[2em] u = \dfrac{w - v}{1 - \dfrac{vw}{c^2}} \end{cases}$$

Armenian Relativistic Lagrangian Function For Free Moving Particle

$$\mathcal{L}_{\text{z}}(w) = -m_0 c^2 \sqrt{1 + s\frac{w}{c} + g\frac{w^2}{c^2}}$$

Lorentz Relativistic Lagrangian Function For Free Moving Particle

$$\mathcal{L}(w) = -m_0 c^2 \sqrt{1 - \frac{w^2}{c^2}}$$

Armenian Relativistic Energy and Momentum Formulas

$$\begin{cases} E_{\zeta}(w) = \gamma_{\zeta}(w)\left(1 + \frac{1}{2}s\frac{w}{c}\right)m_0c^2 = \dfrac{1 + \frac{1}{2}s\frac{w}{c}}{\sqrt{1 + s\frac{w}{c} + g\frac{w^2}{c^2}}}m_0c^2 \\ p_{\zeta}(w) = -\gamma_{\zeta}(w)\left(g\frac{w}{c} + \frac{1}{2}s\right)m_0c = -\dfrac{g\frac{w}{c} + \frac{1}{2}s}{\sqrt{1 + s\frac{w}{c} + g\frac{w^2}{c^2}}}m_0c \end{cases}$$

Lorentz Relativistic Energy and Momentum Formulas

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

First Approximation of the Armenian Energy and Momentum Formulas

$$\begin{cases} E_{\text{չ}}(w) \approx m_0c^2 - (g - \frac{1}{4}s^2)(\frac{1}{2}m_0w^2) = m_0c^2 + \frac{1}{2}m_{\text{չ}}w^2 \\ p_{\text{չ}}(w) \approx -\frac{1}{2}sm_0c - (g - \frac{1}{4}s^2)(m_0w) = -\frac{1}{2}sm_0c + m_{\text{չ}}w \end{cases}$$

First Approximation of the Lorentz Energy and Momentum Formulas

$$\begin{cases} E(w) \approx m_0c^2 + \frac{1}{2}m_0w^2 \\ p(w) \approx m_0w \end{cases}$$

Armenian Energy and Momentum Formulas For Rest Particle (w=0)

$$\begin{cases} E_{\text{ʑ}}(0) = m_0 c^2 \\ p_{\text{ʑ}}(0) = -\frac{1}{2} s m_0 c \end{cases}$$

Lorentz Energy and Momentum Formulas For Rest Particle (w=0)

$$\begin{cases} E(0) = m_0 c^2 \\ p(0) = 0 \end{cases}$$