Abstract Submitted
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Angle-Distortion Equations in Special Relativity FLORENTIN SMARANDACHE, The University of New Mexico — Let's consider an object of triangular form ΔABC moving in the direction of its bottom base BC (on the $x-$axis), with speed v. The side $|BC|= \quad \alpha$ *is* contracted with the Lorentz contraction factor $C(v) = \sqrt{1 - v^2/c^2}$ since BC is moving along the motion direction, therefore $|B'C'|= \quad \alpha C(v)$.But the oblique sides AB and CA are contracted respectively with the oblique-contraction factors *OC(v, B)* and $OC(v, \pi - C)$, where the **oblique-length contraction factor** is defined as:

$$OC(v, \theta) = \sqrt{C(v)^2 \cos^2 \theta + \sin^2 \theta}.$$

In the resulting triangle $\Delta A'B'C'$ one simply applies the Law of Cosine in order to find each distorted angle A', B', and C'. Therefore:

$$A' = \arccos \frac{-\alpha^2 \cdot C(v)^2 + \beta^2 \cdot OC(v, A + B)^2 + \gamma^2 \cdot OC(v, B)^2}{2\beta \cdot \gamma \cdot OC(v, B) \cdot OC(v, A + B)},$$

$$B' = \arccos \frac{\alpha^2 \cdot C(v)^2 - \beta^2 \cdot OC(v, A + B)^2 + \gamma^2 \cdot OC(v, B)^2}{2\alpha \cdot \gamma \cdot C(v) \cdot OC(v, B)},$$

$$C' = \arccos \frac{\alpha^2 \cdot C(v)^2 + \beta^2 \cdot OC(v, A + B)^2 - \gamma^2 \cdot OC(v, B)^2}{2\alpha \cdot \beta \cdot C(v) \cdot OC(v, A + B)}.$$

The angles A', B', and C' are, in general, different from the original angles$A$, B,and C respectively. The distortion of an angle is, in general, different from the distortion of another angle.

Florentin Smarandache
The University of New Mexico

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