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Other Relations between Distorted Angles vs. Original Angles of a Traveling General Triangle in Special Relativity FLORENTIN SMARANDACHE, University of New Mexico — Let's consider a traveling general triangle ΔABC, with the speed v, along its side BC on the direction of the $x-$axis; angles B and C are adjacent to the motion direction, while angle A is of course opposite. After the contraction of the side BC with the Lorentz factor $C(v) = \sqrt{1 - \frac{v^2}{c^2}}$, and consequently the contractions of the oblique-sides AB and AC with the oblique-contraction factor

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

where θ is the angle between respectively each oblique-side and the motion direction, one gets the general triangle $\Delta A'B'C'$ with the following trigonometric relations between distorted angles *A', B', C'* vs. original angles A, B, C of the general triangle:

$$\frac{\sin A'}{\sin A \cdot C(v)} = \frac{\sin B'}{\sin B \cdot OC(v, C)} = \frac{\sin C'}{\sin C \cdot OC(v, B)};$$

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

$$\tan A' = \frac{\tan A}{C(v)} \cdot \frac{1 - \tan B \cdot \tan C}{1 - \tan B \cdot \tan C \cdot C(v)^2}.$$

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