Oblique-Length Contraction Factor in Special Relativity

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

where $0 \leq OC(v, \theta) \leq 1$,

which is a generalization of Lorentz Contractor $C(v) = \sqrt{1 - \frac{v^2}{c^2}}$ because: when $\theta = 0$, or the length is moving along the motion direction, then $OC(v, 0) = C(v)$; similarly $OC(v, \pi) = OC(v, 2\pi) = C(v)$. Also, if $\theta = \pi/2$, or the length is perpendicular on the motion direction, then $OC(v, \pi/2) = 1$, i.e. no contraction occurs; and similarly for $OC(v, 3\pi/2) = 1$.

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