

$$1 - \cos(\beta - \alpha) = 2 \sin^2 \frac{\beta - \alpha}{2},$$

$$\cos \alpha - \cos \beta = -2 \sin \frac{\alpha + \beta}{2} \sin \frac{\alpha - \beta}{2} = 2 \sin \frac{\alpha + \beta}{2} \sin \frac{\beta - \alpha}{2},$$

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$$\begin{aligned} 1 - \cos(\beta - \alpha) + \cos \alpha - \cos \beta &= 2 \sin \frac{\beta - \alpha}{2} \left[ \sin \frac{\beta - \alpha}{2} + \sin \frac{\alpha + \beta}{2} \right] = \\ &= 2 \sin \frac{\beta - \alpha}{2} \cdot 2 \sin \frac{\beta - \alpha + \beta + \alpha}{4} \cdot 2 \cos \frac{\beta - \alpha - \beta - \alpha}{4} = \\ &= 4 \cos \frac{\alpha}{2} \sin \frac{\beta}{2} \sin \frac{\beta - \alpha}{2}. \end{aligned}$$

*(Schulhof Elza, Budapest.)*