



DESIGN EQUATIONS

I. DISPLACEMENT EQUATION

$$\cos \phi = \tan \gamma \cos \theta \sin \phi - \frac{\cos \lambda}{\cos \gamma}$$

γ and λ are constant for any given linkage.

II. VELOCITY EQUATION

$$\omega_{\text{output}} = \omega_{\text{input}} \left(\frac{\tan \gamma \sin \theta}{1 + \tan \gamma \cos \theta \cot \phi} \right)$$

III. ACCELERATION EQUATION (For Constant Input Angular Velocity)

$$\alpha_{\text{output}} = \frac{(\omega_i^2 + \omega_o^2 \tan \gamma \cos \theta + \omega_o \cot \phi (2 \omega_i \tan \gamma \sin \theta - \omega_o))}{1 + \tan \gamma \cos \theta \cot \phi}$$