

$$1) \text{ Initial Point : } \{x_1, r_1, \theta_1, M_1\} \rightarrow \begin{bmatrix} v_1 \\ \mu_1 \end{bmatrix}$$

*Initial Slope*  $\rightarrow$  Assume Straight Initial Characteristic Line  $\rightarrow \text{Slope}(C_-)^{(0)} = \theta_1 - \mu_1$

2) Centerline Intercept :  $\theta_{cl} = 0$

$$y_{cl} = 0 \rightarrow \frac{0 - y_1}{x_{cl} - x_1} = \tan(\text{Slope}(C_-)) \rightarrow \boxed{x_{cl} = -\frac{y_1}{\tan(\text{Slope}(C_-))} + x_1}$$

$$\Delta K_- = \frac{x_{cl} - x_1}{\cos[\text{Slope}(C_-)^{(j)}]}$$

$$\text{right running}(C_-) \text{ characteristic line} \rightarrow \theta_{cl} + v_{cl} = \theta_1 + v_1 + \frac{\sin \mu_1 \cdot \sin \theta_1}{r_1} \Delta K_-$$

$$\rightarrow v_{cl} = \theta_1 + v_1 + \frac{\sin \mu_1 \cdot \sin \theta_1}{r_1} \Delta K_- \rightarrow \rightarrow \begin{bmatrix} M_{cl} \\ \mu_{cl} \end{bmatrix}$$

.....Recalculate

$$\text{Slope}(C_-)^{(0)} = \frac{\theta_1 - \mu_1 - \mu_{cl}}{2}$$

*Iterate from*  $\rightarrow \rightarrow$  *to*  $\rightarrow \rightarrow \rightarrow$