



$$\Delta f_1 = \Delta f - r \Delta \theta$$

$$\Delta L_1 = \Delta L + r \Delta \theta$$

$$\Delta f_2 = \Delta f + r \Delta \theta$$

$$\Delta f = \frac{\Delta f_2 + \Delta f_1}{2}$$

$$\Delta \theta = \frac{\Delta f_2 - \Delta f_1}{2r} \quad (\text{not for now})$$

$$\Delta L = \Delta L_1 - \frac{(\Delta f_2 - \Delta f_1)}{2r}$$

$$= \Delta L_2 + \frac{(\Delta f_1 - \Delta f_2)}{2r}$$

Update
from
init
condition

$$y' = y + \Delta L \cos(\theta) + \Delta f \sin \theta$$

$$x' = x + \Delta L \sin \theta + \Delta f \cos \theta$$

$$\theta' = \theta + \Delta \theta$$