



$$F_2 = F_1 \cos \alpha = F_1 \frac{(\ell^2 - (r \cos \phi - d)^2)^{\frac{1}{2}}}{\ell}$$

$$\hat{u} = \frac{(d - r \cos \phi) \hat{i} + (\ell^2 - (r \cos \phi - d)^2)^{\frac{1}{2}} \hat{j}}{\ell}$$

$$\hat{F}_2 = F_1 \frac{(d - r \cos \phi)(\ell^2 - (r \cos \phi - d)^2)^{\frac{1}{2}}}{\ell^2} \hat{i} + F_1 \frac{\ell^2 - (r \cos \phi - d)^2}{\ell^2} \hat{j}$$

$$\hat{r} = r \cos \phi \hat{i} + r \sin \phi \hat{j}$$

$$\hat{M} = \hat{F}_2 \times \hat{r} =$$