

Date

20-P-KM-BK-024



Given: $\dot{\theta}$, \dot{r} , r

$$v = \dot{r}u_r + r\dot{\theta}u_\theta$$

$$a = \ddot{r}u_r + 2\dot{r}\dot{\theta}u_\theta + r\ddot{\theta}u_\theta - r\dot{\theta}^2u_r$$

$$a = -r\dot{\theta}^2u_r + 2\dot{r}\dot{\theta}u_\theta$$

$$||a|| = \sqrt{(r\dot{\theta}^2)^2 + (2\dot{r}\dot{\theta})^2}$$