

$$e^{(\hat{\mathbf{r}} \times) \theta} = \mathbf{I} + \frac{(\hat{\mathbf{r}} \times) \theta}{1!} + \frac{(\hat{\mathbf{r}} \times)^2 \theta^2}{2!} + \frac{-(\hat{\mathbf{r}} \times) \theta^3}{3!} + \frac{-(\hat{\mathbf{r}} \times)^2 \theta^4}{4!} + \dots$$