

$$\dot{\underline{q}} = \underline{f}(\underline{q}, \underline{u})$$

$$\int \underline{f}(\underline{q}, \underline{u}) dt$$

$$O, F, f_i, C_i, P_i,$$

$$\underline{r}_{OC_i/F}^F, \underline{F}_{e_{p_i}}^T$$