| | | Body | | Flight-Path / Wind | | State Subvector |
|---|---|---|---|---|---|---|
| **Kinetic Energy** | Translational | Longitudinal Velocity | $u$ | Velocity | $V$ | $x_1 = [V \ \alpha \ \beta]^T$ |
| | | Lateral Velocity | $v$ | Angle of Attack | $\alpha$ | |
| | | Normal Velocity | $w$ | Sideslip Angle | $\beta$ | |
| | Rotational | Roll Rate | $p$ | Roll Rate | $p$ | $x_2 = [p \ q \ r]^T$ |
| | | Pitch Rate | $q$ | Pitch Rate | $q$ | |
| | | Yaw Rate | $r$ | Yaw Rate | $r$ | |
| **Potential Energy** | Attitudes | Euler Roll | $\phi$ | Heading Angle | $\chi$ | $x_3 = [\chi \ \gamma \ \mu]^T$ |
| | | Euler Pitch | $\theta$ | Flight-Path Angle | $\gamma$ | |
| | | Euler Yaw | $\psi$ | Bank Angle | $\mu$ | |
| | Position / Nav | North Position | $\xi$ | North Position | $\xi$ | $x_4 = [\xi \ \eta \ h]^T$ |
| | | East Position | $\eta$ | East Position | $\eta$ | |
| | | Altitude | $h$ | Altitude | $h$ | |