Position and Attitude Response of Model A.2 Compared to A.1 and PID Model A.1 failed at 5.20 seconds. Model A.2 failed at 6.70 seconds. x_{ref} z_{ref} x_{PID} z_{PID} 15 $x_{RL,A.1}$ $z_{RL,A.1}$ Position [m] [m]z Position $[{\rm m}]$ $x_{RL,A.2}$ $z_{RL,A.2}$ y Position -10X -15 y_{ref} y_{PID} -20 $y_{RL,A.1}$ $y_{RL,A.2}$ -2510 2 2 6 8 8 10 2 10 6 8 75 θ_{PID} 75 ψ_{PID} ϕ_{PID} $heta_{RL,A.1}$, $\phi_{RL,A.1}$ $\psi_{RL,A.1}$ 50 50 $\theta_{RL,A.2}$ 50 $\phi_{RL,A.2}$) $\psi_{RL,A.2}$ Angle [degree] Angle [degree] Angle [degree] -25-25E θ -50-50-50-75-75-752 8 10 2 8 10 2 8 10

Time [s]

Time [s]

Time [s]