Flight Control Laboratory conducts researches on design of navigation/guidance/control systems and their applications to aircraft.
Research Field 1: Aircraft Dynamics Modeling

Modeling of aircraft dynamics, in particular:

- Formulation of equations of motion for paraglider/hang glider
- System identifications based on flight test data

- Modeling of dynamics of a hang glider
- Analysis on dynamics of a paraglider
- An example of system identification
Research Field 2: Controller Design and its Applications to Flight Control

Optimal design method for PID controllers, its extension to gain-scheduled controllers, and their applications to actual flight control systems including the following aircraft:

- Powered paraglider
- QTW(Quad Tilt Wing)-UAV

A simulation example of flight control for QTW-UAV
Research Field 3: Real-Time Optimal Control and its Applications to Flight Safety

Theory of real-time optimal control techniques and its applications to:

- Aircraft collision avoidance
- Turbulence avoidance/gust alleviation control based on prior information measured by Doppler LIDAR

An example of collision avoidance

Schematic view of avoidance of turbulent regions
Recent Publications (Journal Articles)


Recent Publications (Conference Papers)


