

# Flight Control for Highly Flexible Aircraft

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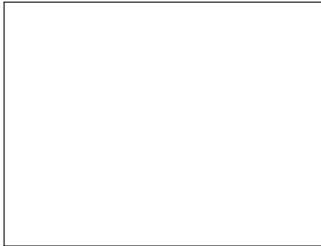
Robotics, Sensors and Advanced Manufacturing  
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# Motivation: High Performance

Need for improved performance and reduced operation costs has led modern aircraft designers to adopt lightweight, flexible wings.

- Commercial airplanes
- Autonomous aircraft
  - Intelligence
  - Surveillance
  - Reconnaissance missions

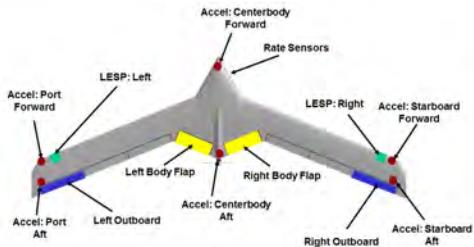


**High flexibility and large deformations in flight!**

# Flight Control and Vibration Stabilization

## Body Freedom Flutter Test Vehicle

- High-aspect-ratio flying wing
- Flexible wings (foam core)
- Unstable modes (flutter)



Source: BFF06 - Lockheed Martin Aeronautics Company

## Objectives

- Aeroelastic modeling
- Vibration suppression
- Flight control: Flying qualities

