High Speed Propulsion Modeling and Control

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High-Speed Propulsion Modeling and Control

• Overview
• CCE-LIMX Mode Transition Modeling and Control
• Dynamic Modeling of Supersonic Propulsion Systems for Aero-Propulso-Servo-Elasticity Analysis.
Combined Cycle Engine (CCE) Large Scale Inlet for Mode Transition Experiments (LIMX) Mode Transition Modeling and Control Fundamental Aeronautics – Hypersonic Project

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Dynamic Modeling of Supersonic Propulsion Systems for AeroPropulsoServoElasticity Analysis

AeroServoElasticity - AeroPropulsoServoElasticity
Fundamental Aeronautics – High Speed Project

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4th Propulsion Control and Diagnostics (PCD) Workshop
Cleveland OH, December 12, 2013
NASA Aeronautics Program Structure

Aeronautics Research Mission Directorate

Fundamental Aeronautics Program (FAP)

Supersonic Project

Hypersonic Project

Subsonic Fixed Wing

Subsonic Rotary Wing

Aviation Safety
Airspace Systems

2006-2012
NASA Aeronautics Program Structure

Aeronautics Research Mission Directorate

Fundamental Aeronautics Program (FAP)

Aviation Safety
Airspace Systems

High Speed
Aeronautical Sciences
Fixed Wing
Rotary Wing
NASA Aeronautics Program Structure

Aeronautics Research Mission Directorate

Fundamental Aeronautics Program (FAP)

High Speed

Aeronautical Sciences

Fixed Wing

Aviation Safety
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Rotary Wing

2013
The goal of APSE (under the High Speed Project) is to assess the integrated dynamic performance of the vehicle. That is the dynamic couplings of the propulsion system with structural dynamics and aerodynamics and how these couplings may influence vehicle performance.
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