

Overview of Research Topics

Department of Aerospace Engineering
Faculty of Mechanical Engineering
Czech Technical University in Prague

Address: Karlovo namesti 12, 121 35 Praha 2, Czech Republic

Research projects topics in 2008:

1. Aerodynamics

- Research of flow fields in aerospace applications
- Design of turboprop engine inlet channels
- Design of compressor stage of turbine engine

2. Aeroelasticity

- Ground vibration tests and flutter calculation

3. Structures

- Mechanical tests of composite structures
- Composite technology
- Composite materials in aerospace applications
- Strain gauge measurements
- Non destructive testing of composite structures
- System of flight load measurement of small aircraft and on line fatigue structural failure (“fatigue velvet”)
- Flight measurements of small aircraft
- Static and dynamic tests of structures
- Strength analysis

4. Aircraft Design and Development

- Design of four-seat composite plane with piston engine
- Development of small single seat aircraft family (cooperation with Jihlavan airplanes)
- Modernization of VS2 ejection seat (cooperation with Aero Vodochody)
- Automatic parachute system (cooperation with TL Electronics)
- Development of ducted fan propulsion unit for ultra light aircraft
- Design of all-composite two-seater trainer plane with ducted fan power unit

5. Smart Materials and Structures

- Using active structures for aircraft shape morphing
- Shape morphing using MFC piezoceramic actuators
- Manufacturing of composite materials with piezoceramic fibres