Istanbul Technical University
Faculty of Aeronautics & Astronautics

Can Kurtuluş, Taşkın Baltacı
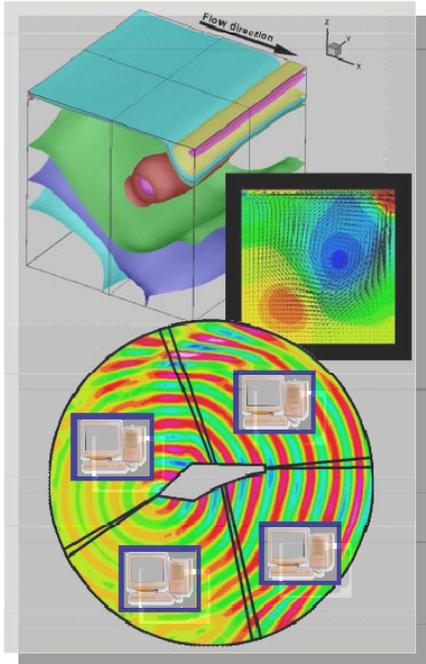
Graduate Students
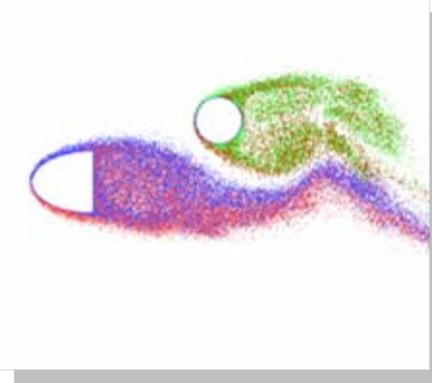
Istanbul by 360 Degrees by Orhan Durgut

With a history stretching back over 230 years, providing technical education within a modern educational environment and strong academic staff, **Istanbul Technical University (İTÜ) is strongly identified with architectural and engineering education in Turkey** .
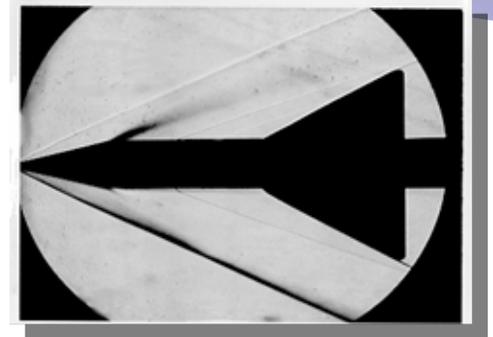
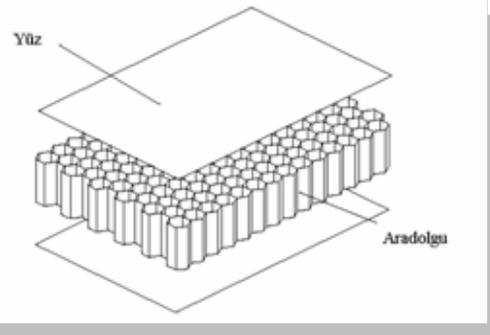# Research Fields
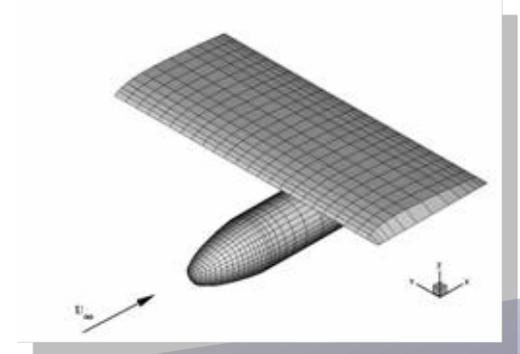
• **Parallel computing**

• **Wake interactions**

• **Rocket Exp**

M=2.655

• **Microsatellite structural analysis**

Yüz

Aradolgu

• **External store release**

• **Robotics, otomation**

Computational Engineering Lab

Supercomputing Systems

SGI Altix System

- 32 Intel Itanium2 1.3 Ghz CPU
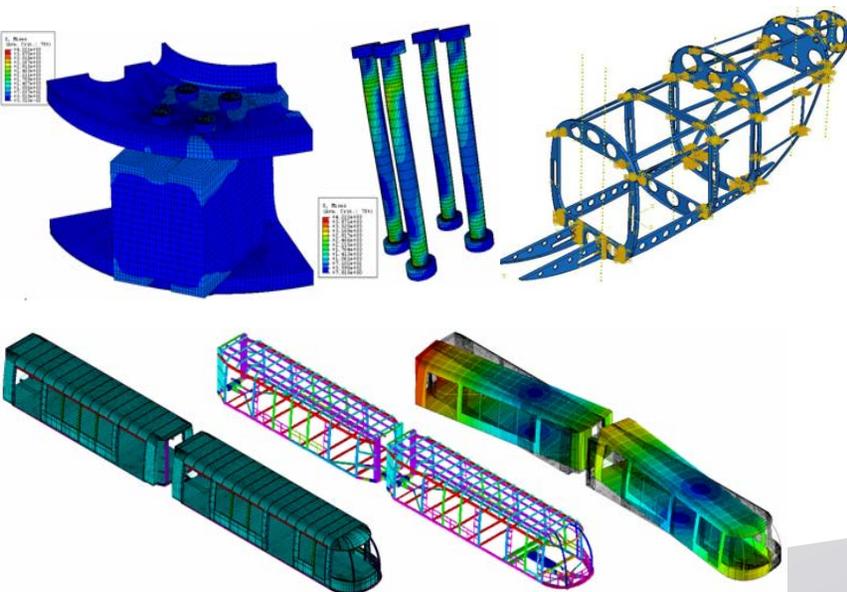- 64 GB RAM

SGI Origin 3000 System

-32 MIPS 600Mhz CPU
-32 GB RAM
-Sanal Gerçeklik (InfitiniteReality3)

İz Etkileşimi

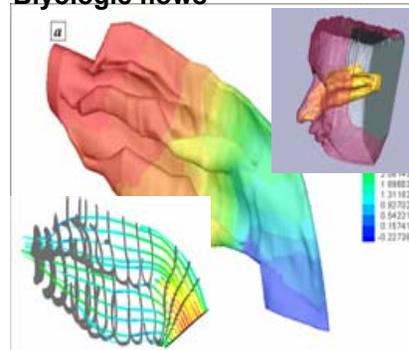## Computational Aerodynamics Analysis

Computational Structural Analysis

Biyologic flows

External Aerodynamics

Building Aerodynamics

Şekil 19: *Son Gövde* sürtünme katsayıları

İstanbul Technical University
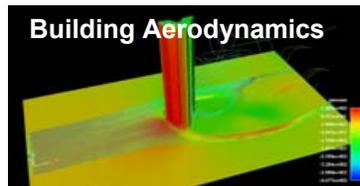
Faculty of Aeronutics & Astronautics
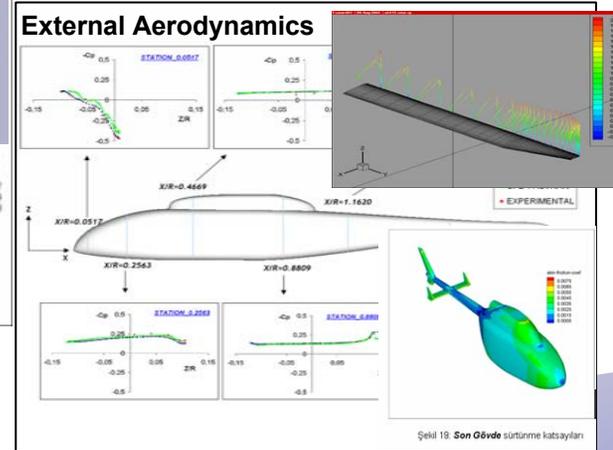
Rotorcraft Center of Excellence

- Faculty is currently, designing, manufacturing and testing national rotorcrafts and micro-helicopters

ITU CubeSat Project

- Funded by
  - The Scientific & Technological Research Council of Turkey (TUBITAK)

  - State Planning Organization (DPT)

Spacecraft System Design Lab

- Picosatellite design (Cubesat Project)

- 350 lt thermal vacumm chamber (from 1000 mbar to 1 x 10-6 torr, -60 to 125 C, 70*80 cm)

- 10000 class clean room

- **Will be operational by the end of 2006**

Other facilities available for ScSDL

- ITU, Faculty of Electrical and Electronic Engineering: EMI/EMC Tests

- ITU, Faculty of Mechanical Engineering: Vibration Tests

- ITU, Faculty of Chemical and Metallurgical Eng.: Thermal Tests

MISSION :

Taking low resolution pictures from space and communicate with the ground station in less than 2 years

By the end of the project, we expect to have

- A fully operational Spacecraft Systems Design Lab

- A ground station which can communicate with the satellite

- A picosat in orbit

- Experience of design, manufacturing, test and integration of subsystems of satellites and hands-on training capability

Timeline of the Project

- Preliminary Research and Analysis of the Previous Cubesat Projects (4 months)

- Conceptual Design (2 months)

  - Computational and Detailed Analysis (3 months)

- Manufacturing of the subsystems (5 months)

- Engineering Model and Tests (5 months)

- Flight Model and Tests (5 months)

Graduate Students:

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    taskin.baltaci@gmail.com

Faculty Advisors :

- Prof. Dr. Rustem Aslan : aslanr@itu.edu.tr (Project supervisor)

- Asst. Prof. Cuma Yarim : yarim@itu.edu.tr

- Asst. Prof. Gokhan Inalhan : ginalhan@rotam.itu.edu.tr