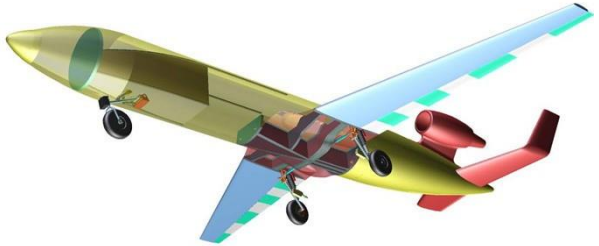
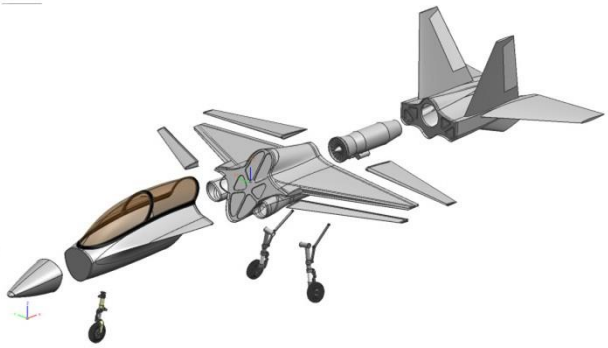
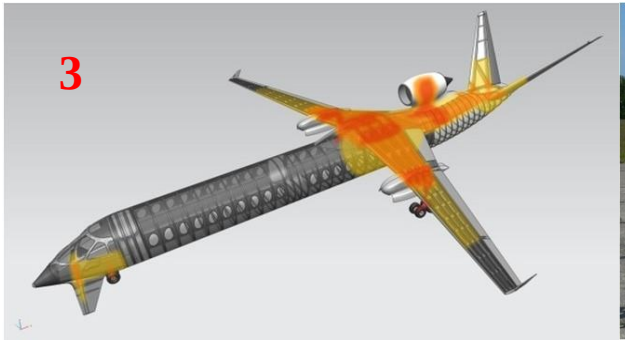
prof. Zdobysław Goraj, PhD, DSc

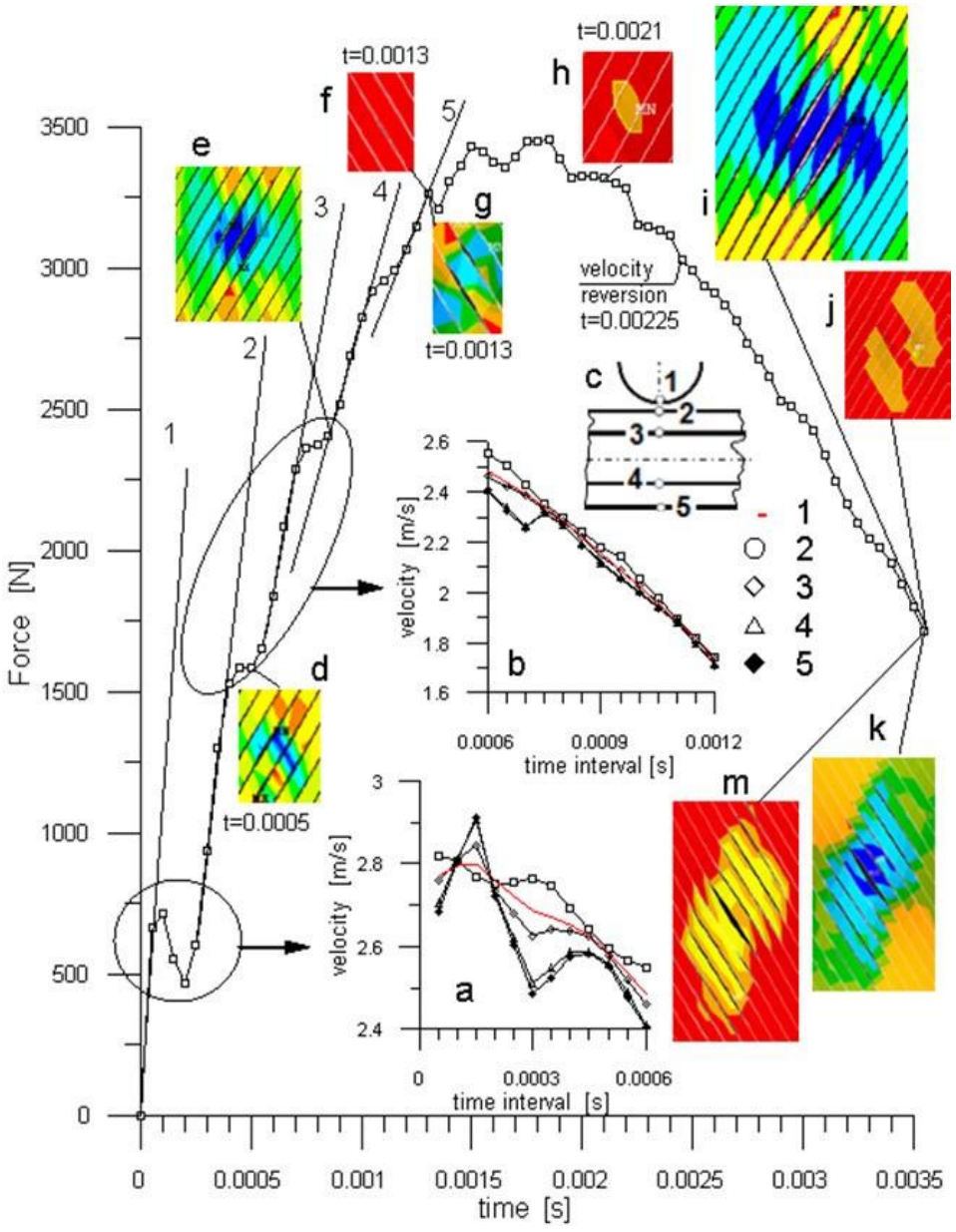
1. **Design of light aircrafts and unmanned aircraft vehicles (UAV)**





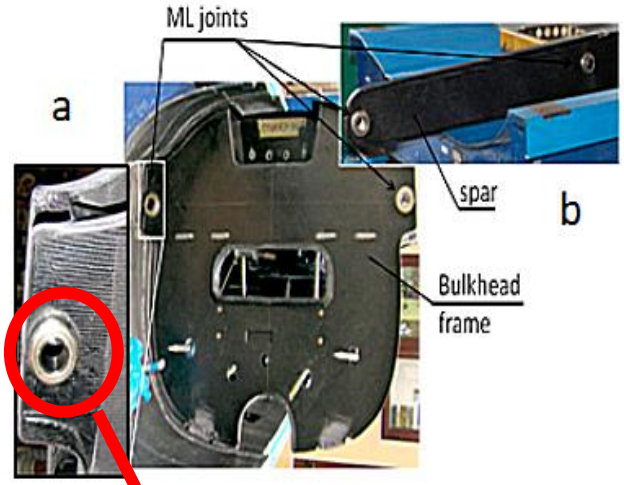





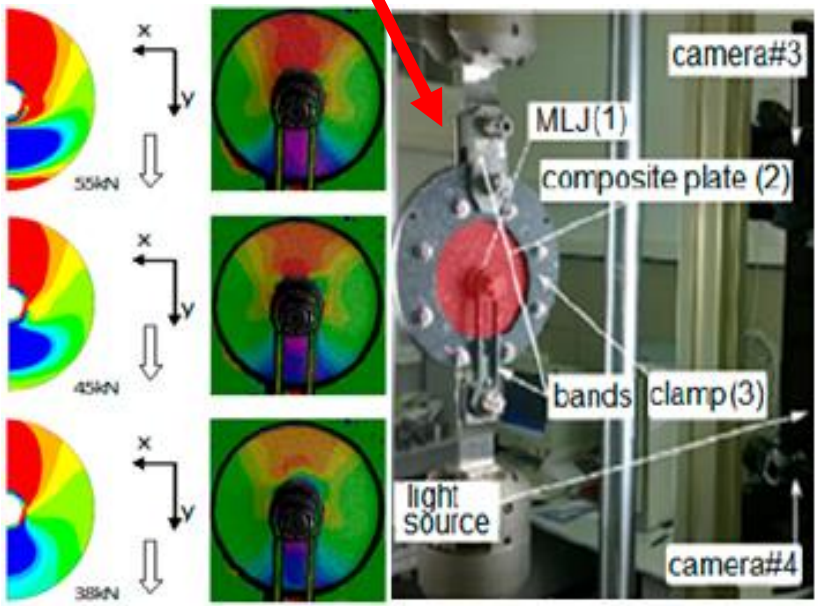
Piotr Czarnocki, PhD, DSc



Piotr Czarnocki, PhD, DSc

- **Development of process specification for manufacturing airframe parts made of VBO CF prepregs with the use of double vacuum bag manufacturing process.**
- **Strength -stiffens-mass analysis of composite leaf of a spring landing gear meeting JAR23 requirements**
- **Comparative FE and experimental analyses of the selected designs for point loading of thin-walled aircraft composite structures**





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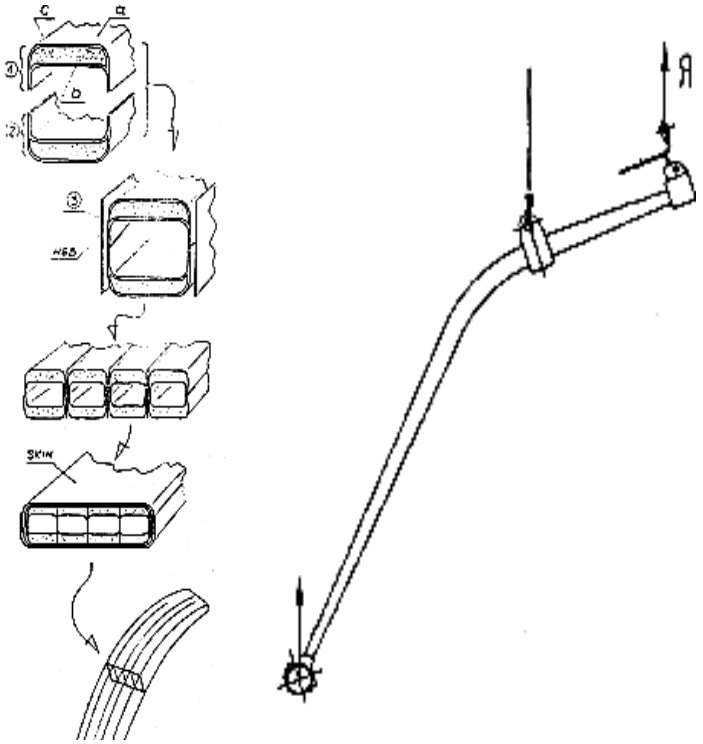


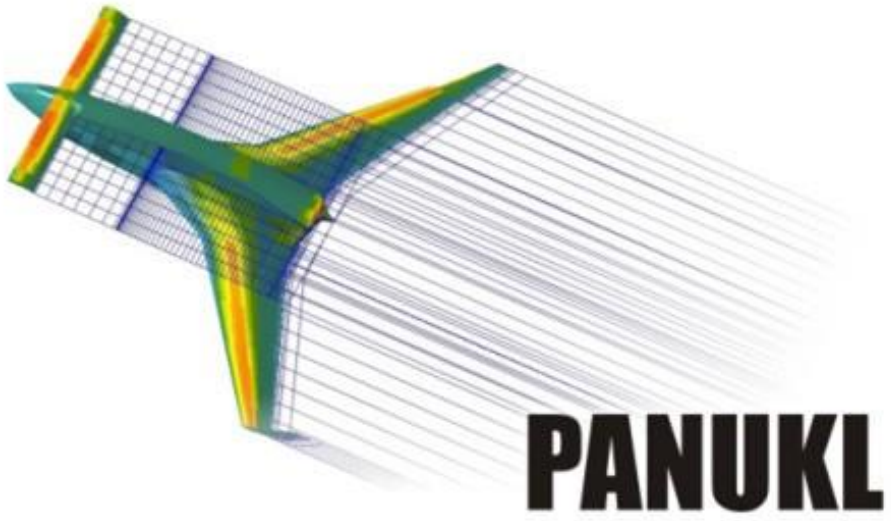
Piotr Czarnocki, PhD, DSc

Intermidate projects:

- **FE analysis of multibolt joint of CF thin-walled airframe composite components**
- **FE analysis of limitations of the standard tests used for finding shear strength and stiffness of laminates**
- **Influence of the test data reduction schemes on the results of FE strength and stiffness analysis in the case of composite materials**

Tomasz Goetzendorf Grabowski, PhD, DSc

1. **Designing an aircraft in an unconventional configuration due to the handling qualities**
2. **Preliminary designs of light aircraft and UAVs**
3. **Numerical analyzes (aerodynamics, dynamic stability)**



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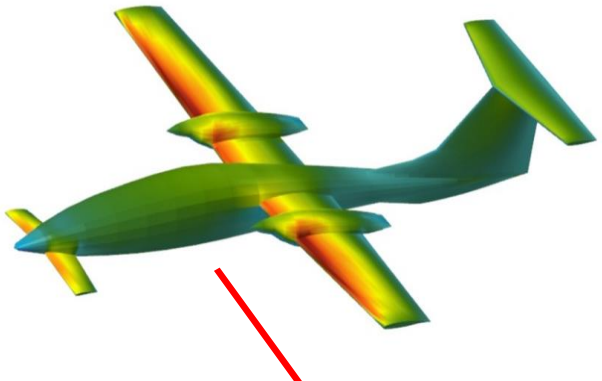

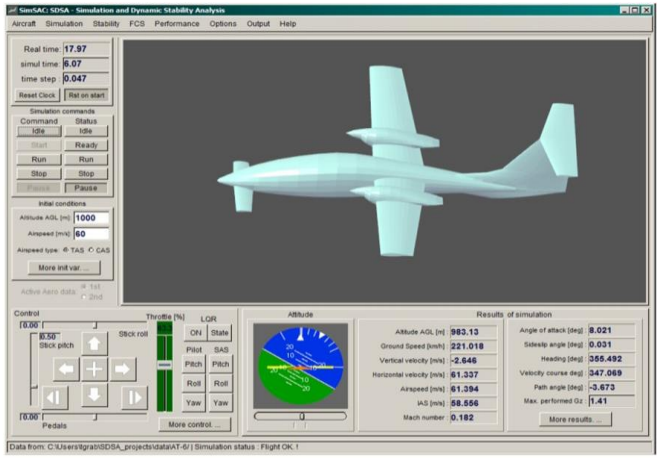

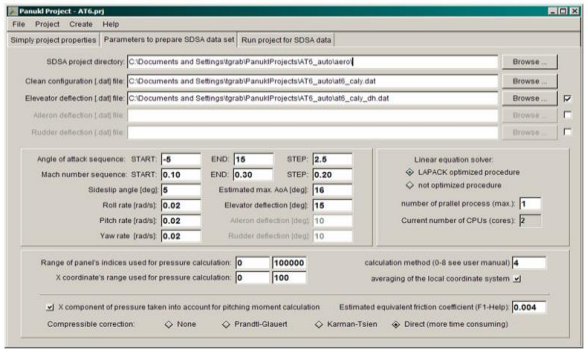

Mirosław Rodzewicz, PhD, DSc

1. **Structural design of a 1-seat hovercraft**
2. **Design and testing of a propulsion system with ducted propeller**
3. **Optimization of strength properties of pin connections for polymer composite shells**
4. **Recording of loads and investigations into the load spectra of structural elements of light aircraft**

Mirosław Rodzewicz, PhD, DSc

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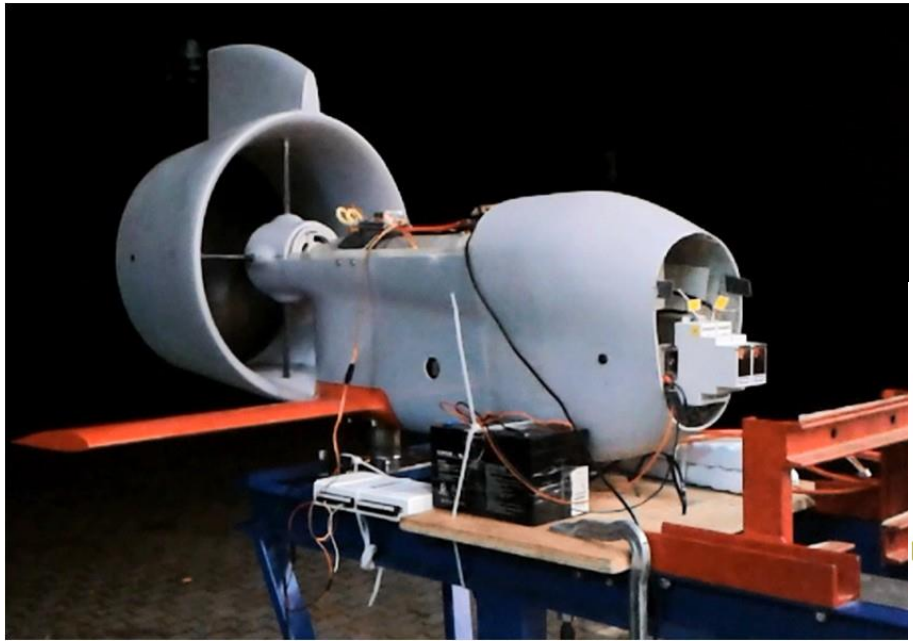

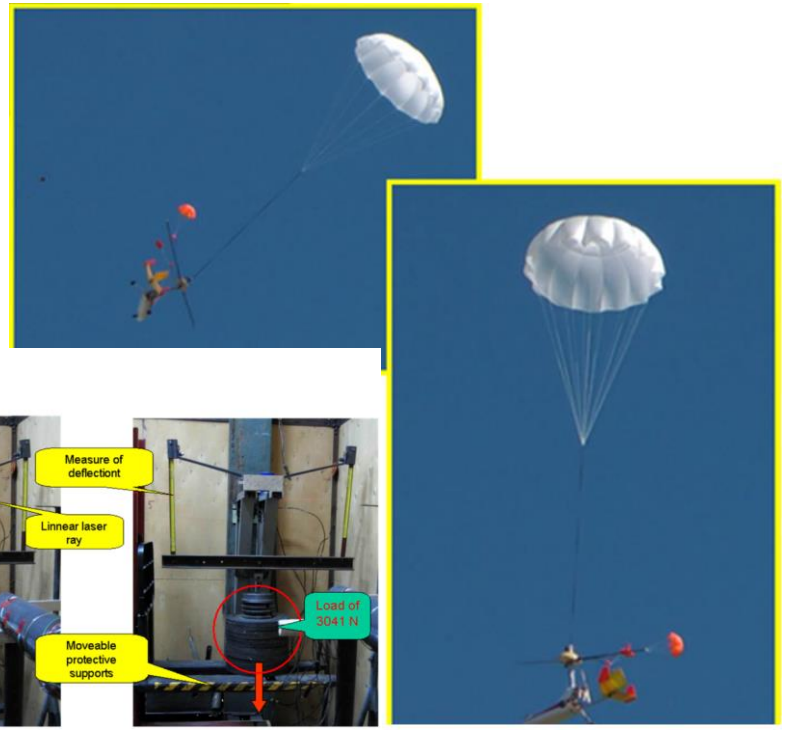

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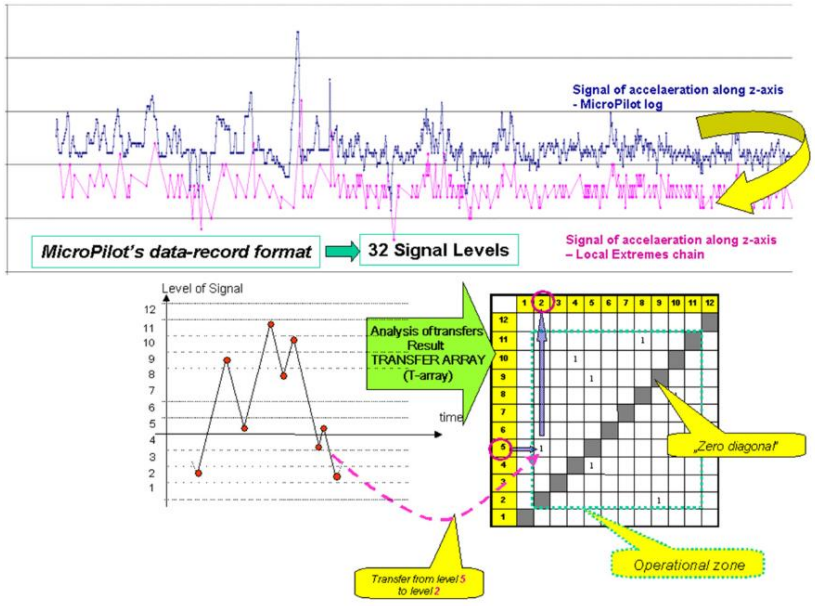
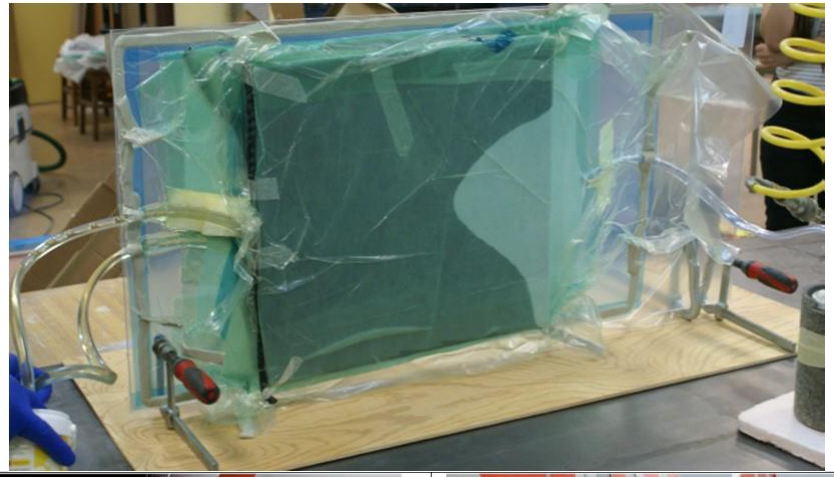
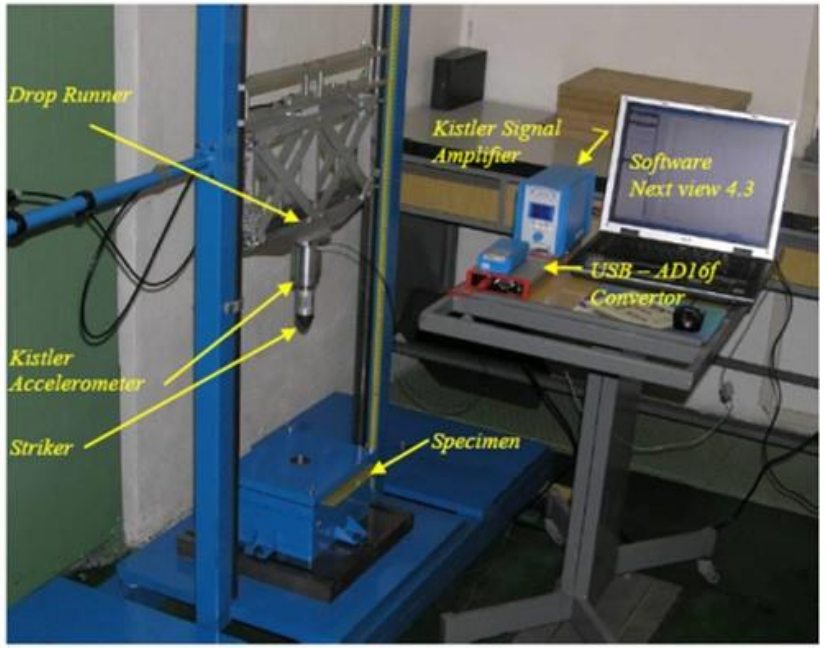


Kamila Kustroń, PhD

1. **Design in Airframe Resistance to Bird Strikes and Hail Impacts (ABAQUS, LABVIEW)**
2. **Design in Smart Diagnostics based on Structural Health Monitoring and Damage Prognosis for Composite Airframe (ABAQUS, ANSYS, MATLAB, LABVIEW)**
3. **Preliminary design in Smart Diagnostics for aircraft's or rocket's composite element of airframe (ABAQUS, ANSYS, LABVIEW)**
4. **Smart Structures and Smart materials**
5. **Airworthiness Management**
6. **Maintenance Program Optimisation**
7. **Artificial Intelligence in Uncertainty Assessment**
8. **Evaluation of the Safety Management in Civil Aviation**
9. **Human Factor in Civil Aviation**

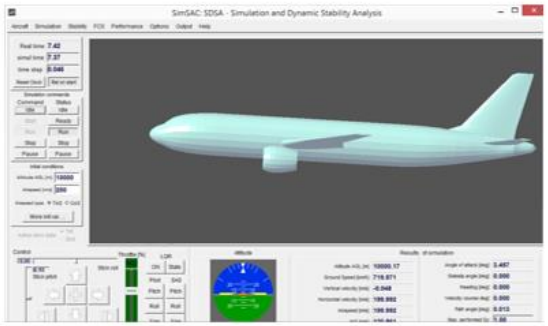
Kamila Kustroń, PhD

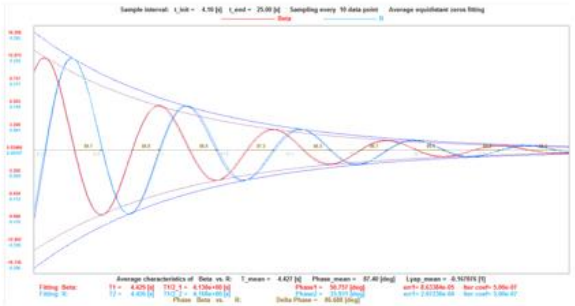


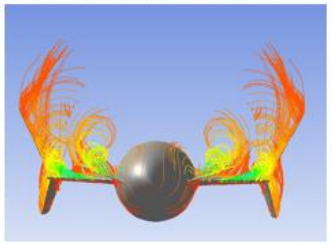


Agnieszka Kwiek, PhD

1. **Martian aircraft**
2. **Preliminary aircraft and rocket design with use of numerical tools for aerodynamics analysis**
3. **Numerical aerodynamic, dynamic stability analysis, controllability, and simulation of aircraft in unconventional configurations**
4. **Topics associated with design system for suborbital flights**
5. **Problems related**
   to preliminary design,
   simulation,
   aerodynamic, stability,
   controllability
   of rocket-planes

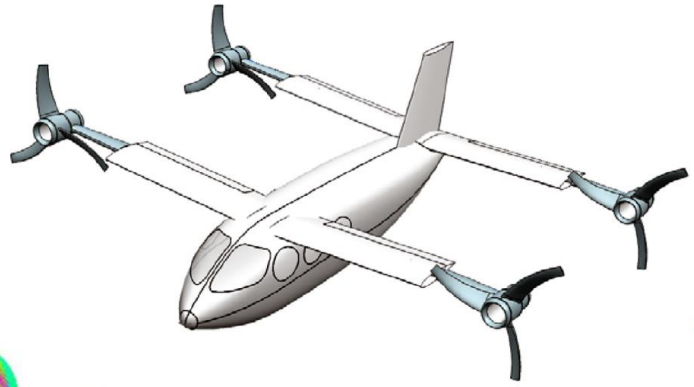


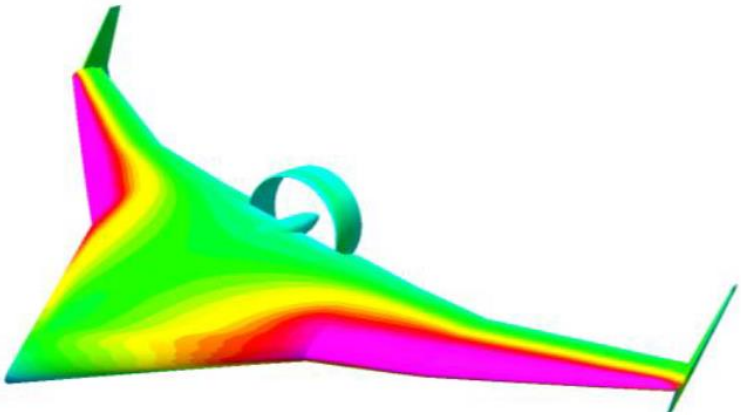


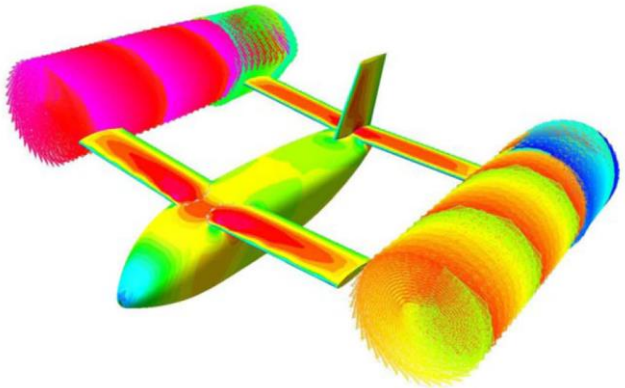


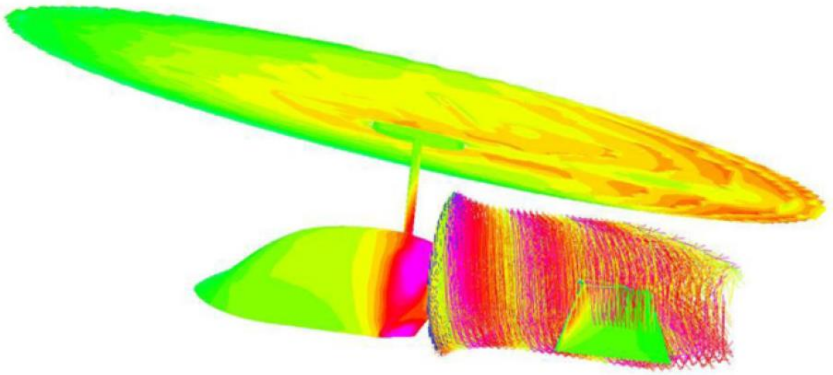
Marcin Figat, PhD

1. **Aircraft aerodynamic analysis**
2. **Aircraft aerodynamic analysis - determination of stability and controllability derivatives**
3. **Aerodynamic analysis of unconventional configurations**
4. **Aircraft optimization**
5. **Unconventional aircraft design**









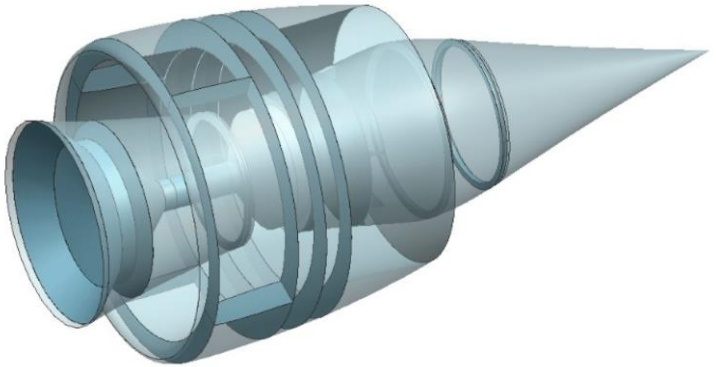
Wojciech Grendysa, PhD

1. **Construction work of aircraft components*, example components:**
- **Spring landing gear legs in composite or metal.**
- **Composite control system pusher.**
- **Universal control system lever.**
- **Other, on request of the student.**
2. **Universal flight instrument (Glass Cockpit) based on Arduino components.**
3. **Glider flight computer based on Arduino components.**
4. **Winch deck instrument for communication with glider computer.**
5. **Control device (foot or hand) of the glider control system adapted for a disabled person.**
6. **Optimisation of composite flex beam structure.**
7. **Optimisation of the aerofoil shape for adequate aerodynamic performance.**

Wojciech Grendysa, PhD

Mariusz Kowalski, PhD

1. **FEM analysis of composite structures.**
2. **Composite structures design.**
3. **Topology optimization of 3D printed components.**
4. **Designing of lightweight components for UAVs.**
5. **Design and manufacturing of prototype "forged carbon" elements.**



prof. Cezary Galiński, PhD, DSc

1. **Conceptual design of light airplanes**
2. **Conceptual design of sailplanes**
3. **Conceptual design of unmanned airplanes**
4. **Detailed design of airplane's and sailplane's components (wings, fuselages, empennage etc.)**

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