



Global Change Research Centre AS CR

General description

The principal activity of the CzechGlobe is a comprehensive scientific research on issues of the "Global Change" and its impacts on the atmosphere, terrestrial biota and human society. The research activities are carried out in four scientific divisions: Climate Analysis and Modelling, Ecosystems Analysis, Impact Studies and Physiological Analyses, Innovation and Mitigation Techniques. Interdisciplinary approaches within and across the divisions are dominating way of carrying out the research.

Competences & Capabilities

Department of Remote Sensing of the CzechGlobe is focused on imaging spectroscopy, data acquisition, pre-processing and analysis of airborne imaging spectroscopy data, furthermore on data analysis and development of algorithms for estimation of fluorescence, biophysical and biochemical parameters of vegetation from airborne and satellite data. Our current projects in space are related mainly to ESA FLEX mission.

Major Space Projects & References

- Technical Assistance for the Deployment of an advanced hyperspectral imaging sensor during HYFLEX: deployment of airborne fluorescence imaging sensor with supportive instruments for purposes of ESA FLEX mission including data analysis. Project funded by ESA.
- FLEX/Sentinel-3 Tandem Mission Photosynthesis Study: review of possibilities of chlorophyll fluorescence estimation methods. Project funded by ESA.
- Spectral-spatial scaling from leaf to canopy level using spectrodirectional approaches in support of the GMES Sentinel 2: 'Superspectral' mission: PECS project focused on development of algorithms for Sentinel-2 mission Project funded by ESA.

- Remote sensing of forest dieback and recovery assessment after bark beetle outbreaks - (COST)
- Project funded by Czech Ministry of Education, Youth and Sports

Space Related Equipment, Labs & Certificates

- Hyperspectral sensors: CASI 1500, SASI 600, TASI 600
- Laboratory and field spectroscopy: Reflectance/Transmittance Sphere, Sunphotometer Microtop II, ASD FieldSpec-4
- Aircraft: Cessna 208B Grand Caravan

- 1 Photogrammetric aircraft Cessna 208B Grand Caravan with two scanning holes, with IMU/GPS unit, with gyrostabilizer and HW & SW for navigation.
- 2 Hyperspectral sensor CASI 1500
- 3 Hyperspectral sensor SASI 600
- 4 Hyperspectral sensor TASI 600
- 5 Example of the outputs: Hyperspectral image from VNIR range.
- 6 Example of the outputs: Map of chlorophyll content derived from hyperspectral data (VNIR + SWIR).

Contact

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Responsible for space and ESA projects

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