

SCERIN-10 Workshop on Earth System Observations and 10th Anniversary

Czech Republic, Brno, 26th - 29th June 2023

Recent terrestrial ecosystems LCLU changes and driving forces - challenges for RS and sustainable management

Global Change Research Institute, CAS

GOFC-GOLD and START, USA

NASA Goddard Space Flight Center

University of Maryland, Baltimore County

Charles University, Prague, Faculty of Science



FACULTY OF SCIENCE
Charles University

The objectives of SCERIN-10 are:

- 1) to inform about ongoing major scientific efforts and projects with possible contribution and follow-up activities of the SCERIN participants;
- 2) facilitate progress of the ongoing activities of the SCERIN focus groups;
- 3) review and advance further the network goals, structure and long-term plans; and**
- 4) foster new ideas for joint activities (new interactive maps and applications) and papers by participants.

SCERIN Focus Groups (FG):

FG1: Forest monitoring - disturbances, health and biomass.

Leads: M. Nita/ J. Albrechtová/P. Campbell

FG2: Land cover changes – agricultural abandonment, urban expansion.

Leads: G. Taff/L. Kupková and P. Stych/ L. Genc.

FG3: Validation/verification network *

Leads: A. Halabuk/I. Manakos and L. Filchev/S. Lewinsky*

FG4: Water management and LC impacts (river watersheds, catchments, dams)




Leads: V. Starodubtsev/ I. Pilas / V. Lagutov

* Proposed **new “Urban” Focus Group**

Urban FG potentially can involve the use of RS technologies to study and analyze urban areas. Some of the **tasks** that can be included/relevant in **Urban FG** are:

Task	Description
Land use and land cover classification	RS data can be used to classify and map different land use and land cover categories within urban areas, such as residential areas, industrial zones, vegetation, water bodies, and transportation networks.
Change detection	RS images acquired at different time periods can be compared to detect and monitor changes in urban areas, including urban expansion, infrastructure development, and land use transformations.
Urban heat island analysis	RS data can be used to assess and analyze the urban heat island effect, which refers to the phenomenon of higher temperatures in urban areas compared to surrounding rural regions. This involves studying surface temperature variations and identifying factors contributing to heat island formation.
Urban morphology analysis	RS data for analysis of building height, density, arrangement, and urban form. This can help understand urban structure and its impact on various aspects such as energy consumption, urban planning, and environmental sustainability.
Urban vegetation analysis	RS data to study urban vegetation cover, including parks, green spaces, and trees. This analysis can help assess the distribution, health, and quality of urban vegetation, contributing to urban greening initiatives and urban ecosystem management.
Air quality assessment	RS for insights into urban air quality by measuring atmospheric pollutants, identifying emission sources, and monitoring air pollution patterns in urban areas. This information is crucial for understanding environmental health and guiding air quality management efforts.
Socioeconomic studies	RS data can be combined with socioeconomic datasets to explore the relationships between urban form, land use patterns, and socio-economic indicators such as income, education, and access to services.

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9:15	Challenges and Opportunities for Sustainable Urban Ecosystems: A Focus on Architecture and Urban Planning in the Face of Climate Change	<i>Milica Vujovic</i>
9:30	Urban greenery – an important component of citizens well-being	<i>F. Zemek</i>
9:45	Urban land cover mapping in coastal zone of Kaniv Reservoir	<i>O. Brovkina</i>