CETAL-PW

High-Field Laser Physics

LaMP

Laser Material Processing
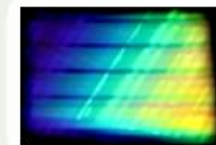
PhIL

Photonic Investigations Laboratory

http://cetal.inflpr.ro/phil

Spectroscopy
The aim is in the development of innovative spectroscopic systems for materials evaluation and characterization and investigation of biological phenomena. More info...

Metrology and fiber optics
The focus is to test degradation of optical components and measure the response in radiation fields such as: gamma-ray, electron beam, mixed gamma-neutron, proton, alpha, X-ray. More info...

Biophotonics
Biophotonics research focuses on the development of optical characterization methods and imaging to study cells at interaction with different materials and their functions at microscopic and nanoscopic scales. More info...
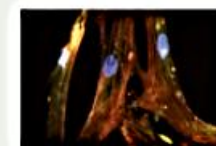
Vibrometry
The vibrometry unit is proposed to investigate and measure in non-contact mode the vibration phenomena produced by different types of products. More info...
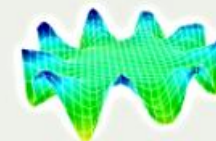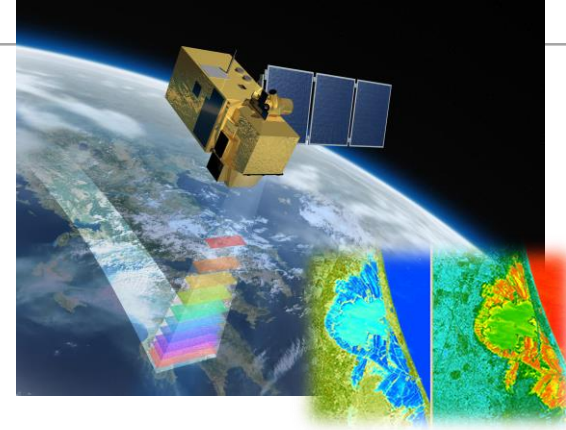
SENSECO

WG4: Establishing data quality through traceability and uncertainty

Goal of SENSECO

▶ develop and further the capabilities for the interpretation of multi-sensor and multi-scale optical measurements and develop common protocols for Sentinel-2, S3 and FLEX passive EO communities use.

▶ WG4 aims to make measurements comparable across different scales, space and time. It thus strongly intersects with the activities of WG1, WG2 and WG3 by ensuring a homogenized and standardized approach to data quality and uncertainty.

The aim will be achieved by **training researchers, establishing best practices for calibration/validation (cal/val), quality assessment (QA) and integrating uncertainty and traceability in software packages** to render these concepts ready for practical applications.

WG4&WG1 - Training School
"Traceability Chains, Uncertainty Propagation and Calibration/Validation"

Marcos Jiménez Michavila	INTA
Jan Pisek	Tartu Observatory
Katja Susanne Grossmann	IUP Heidelberg
Adrián Moncholí	University of Valencia
Shahar Weksler	Tel Aviv University
Dessislava Ganeva	Bulgarian Academy of Sciences
Maria Luisa Buchaillot	University of Barcelona
Simon Trim	University of Zurich
Andreas Hueni	University of Zurich
Javier Pacheco-Labrador	Max-Planck-Institut
Laura Mihai	National Institute for Laser, Plasma and Radiation Physics
Marian Ghena and Razvan Mihalcea	National Institute for Laser, Plasma and Radiation Physics

Program

Day 1 - 18 November 2019			
09.00 -09.15	Welcome to CETAL and introduction to SENSECO and its objectives related to this training school. Participants intro.		all
09.15- 10.00	Key concepts for uncertainty analysis I	presentation	Simon Trim
10.00-10.20	*Coffee break*		
10.20 - 11.00	Introduction to propagation law of uncertainties II	presentation	Simon Trim
11.00 - 11.15	*Break*		
11.15 - 12.00	introduction to propagation law of uncertainties II	presentation	Simon Trim
12.15 – 13.15	*Lunch*		*Restaurant Hotel Magurele*
13.30 - 14.30	Hands-on for system laboratory radiometric calibration – radiance calibration - I	laboratory set - up	Laura Mihai
14.30 - 15.30	Hands-on for system laboratory radiometric calibration – irradiance calibration II	laboratory set - up	Laura Mihai
15.30-16.00	*Coffee break*		
16.00 - 18.00	Read the plot data and make standard deviation and means calculations, DC corr. (data calc.). Plots for sources of uncertainties in case of irrad. (when changing the distance to FEL and source current)	example code	Laura Mihai

Program

Day 2 - 19 November 2019			
09.00 - 10.00	General steps for uncertainty budget - „Steps 1-6 from uncertainty budget" on Rad. Cal. Example.	presentation	Laura Mihai
10.00 – 10.15	Coffee break		
10.15 - 11.00	Rad. Cal. Gain offset. Calculation	example code	Andreas Hueni
11.00 – 12.00	Combine and propagate uncertainties – Monte Carlo of Rad. Cal. I	Monte Carlo - example code	Andreas Hueni
12.15 – 13.15	Lunch		Restaurant Hotel Magurele
13.30 – 15.30	Combine and propagate uncertainties – Monte Carlo of Rad. Cal. II	Monte Carlo - example code	Andreas Hueni
15.30-16.00	Coffee break		
16.00 – 18.00	Combine and propagate uncertainties – Monte Carlo of Rad. Cal. III	Monte Carlo - example code	Andreas Hueni
18.30 – 19.30	bus to the town		
19.30	Dinner		

Program

Day 3 - 20 November 2019			
09.00 – 09.30	spectral calibration demo	Laboratory setup	Laura Mihai / Simon Trim
09.30 – 10.00	Introduction to gain uncertainty propagation into radiance data	presentation	Andreas Hueni
10.00 – 10.30	Coffee break		
10.30 – 12.00	Programming gain uncertainty propagation into radiance data	example code	Andreas Hueni
12.15 – 13.15	Lunch		CETAL
13.30 - 15.30	Introduction to RTM and LUT generation		Javier
15.30-16.00	Coffee break		
16.00 - 18.00	Uncertainty propagation in RTMs		Javier