Abstract Book

Prague, Czech Republic

Faculty of Civil Engineering
5th Workshop on Remote Sensing of the Coastal Zone

Wed, 01 Jun 2011 2011-06-01

08:30 Ocean Colour
PC Room 02; Session Chairman: Carsten Brockmann
Welcome to the participants
Antonio Palucci
08:30 - 08:40

Maritime Spatial Planning: a New Frontier for Remote Sensing of Coastal and Marine Regions
Vittorio Barale
08:40 - 09:10

Mapping total suspended matter using ocean color data over La Plata River Estuary, Argentina
Ana I. Dogliotti, Kevin Ruddick, Bouchra Nechad
09:10 - 09:30

Observation on the suspended sediment concentrations in the coastal area using Geostationary Ocean Color Imager (GOCI)
09:30 - 09:50

Use of Ocean Colour data to estimate Chlorophyll trends in the Mediterranean Sea
Eleonora Rinaldi, Simone Colella, Rosalia Santoleri, Giovanni Coppini
09:50 - 10:10

10:45 Ocean Colour 2
PC Room 02; Session Chairman: Vittorio Barale
Ocean color and distribution of suspended particulates in the St Lawrence estuary
martin a montes, Suzanne Roy, Jean-Pierre Gagné, Serge Demers, Servet Cizmeli, Sebastien Mas
10:45 - 11:05

Comparison between satellite radiometers and lidar fluorosensor in the Arctic Sea off the Svalbard Islands
Luca Fiorani, Francesco Colao, Maurizio Guarracino, Antonio Palucci
11:05 - 11:25

Coastal Zone Marine Ecosystem Functioning: the TYR01 Experiment
Salvatore Marullo
11:25 - 11:45
Estimation of the diffuse attenuation coefficient from Meris imagery and application to seabed habitat mapping
Bertrand SAULQUIN, Anouar HAMDI, Jacques A POPULUS
11:45 - 12:05

14:00 Optical Properties and Algorithms
PC Room 02; Session Chairman: Miroslaw Darecki
Phytoplankton absorption capacity in the Canadian Arctic. Implications for remote sensing of northern regions.
Corinne Bourgeault-Brunelle, Pierre Larouche, Michel Gosselin
14:00 - 14:20

cOC from Ocean Colour to Organic Carbon
Birgit Heim, Roland Doerffer, Paul P. Overduin, Hugues Lantuit, Frank Guenther, Jens Hoelemann, Heidi Kassens, Carolyn Wegner
14:20 - 14:40

Regional approach to ocean colour remote sensing of coastal waters
14:40 - 15:00

Spectroscopy of chromophoric organic substances released by soil fungi into water
Daria Khundzhua, Elena Fedoseeva, Svetlana Patsaeva, Vera Terekhova, Valeria Vavilova, Viktor Yuzhakov
15:00 - 15:20

Chlorophyll a mapping of optically complex coastal waters using regionally specific neural network-based algorithms for MERIS full resolution data
Luis Gonzalez Villas, Evangelos Spyrokos, Jesus M. Torres Palenzuela, Nina Yarovenko
15:20 - 15:40

16:15 Temperature
PC Room 02; Session Chairman: Preben Gudmandsen
Progress towards the implementation of a Brillouin-LIDAR for remote sensing of the temperature profile in the ocean
Andreas Rudolf, Thomas Walther
16:15 - 16:35
GENERATION OF OCEAN VECTORS ASSOCIATED WITH SURFACE CURRENTS IN THE COASTAL ZONE: PERSPECTIVE OF GEOSTATIONARY SATELLITE OBSERVATIONS
Eileen Maturi, Igor Appel
16:35 - 16:55

Estimation of chlorophyll-a concentration using an empirical bio-optical algorithm and MERIS imagery for monitoring of coastal waters
stefani novoa, guillem chust, Jean Marie Froidefond, caroline petus, javier franco, S. Seoane, E. Orive, A. Borja, Y. Sagarminaga
16:55 - 17:15

Remote sensing of surface roughness using optical range – time images of water surface
Victor I Titov, Alexander G Luchinin, Emma M Zuikova
17:15 - 17:35

On the possibility of uranium detection in natural waters with the use of laser spectroscopy
17:35 - 17:55

19:00 Welcome party WS
Welcome Party CZ
19:00 - 21:30
08:30 Multisensor Applications
PC Room 02; Session Chairman: Sergey Babichenko

Lidar fluorosensor water quality monitoring of lake and river
Yasunori Saito
08:30 - 09:00

Monitoring Intertidal Flats using Multi-Sensor Remote Sensing
Kerstin Stelzer, Martin Gade, Vanda Brotas
09:00 - 09:20

Remote sensing as a tool to monitor and analyse Abruzzo coastal changes
Francesco Palazzo, Valerio Baiocchi, Fabio Del Frate, Francesca Giannone, Donatella Dominici, Filippo Del Guzzo, Daniele Latini, Keti Lelo, Sylvie Remondiere
09:20 - 09:40

Observation on the suspended sediment concentrations in the coastal area using Geostationary Ocean Color Imager (GOCI)
Joo-Hyung Ryu, Jong-Kuk Choi
09:40 - 10:00

10:45 Oil Pollution
PC Room 02; Session Chairman: Svetlana Patsaeva

Oil seep in the Black Sea, Georgian section imaged and studied with the ERS-1/2 and Envisat SARs
Natalia Evtushenko, Andrei Ivanov
10:45 - 11:05

Oil pollution detection using shipborne LIF/LIDAR
Jesus M. Torres Palenzuela, Nina Yarovenko, Luis Gonzalez Vilas, Mª del Carmen Martin de la Cruz
11:05 - 11:25

LIF lidar as an early warning tool for oil pipeline integrity monitoring
Sergey Babichenko, Alexey Lisin, Larisa Poryvkina, Sergey Shchemelyov, Monica Pärno, Innokenti Sobolev, Doug Beynon
11:25 - 11:45

Evaluation of water pollution by LIF LIDAR
Andrei B. Utkin, Alexander V. Lavrov, Rui Vilar
11:45 - 12:05
14:00 Poster Session
Assessing the fundamental potential for spectral linear unmixing of coral reef substrates
Tamir Caras, Arnon Karnieli, John Hedley
14:00 - 14:00

Detection of oil pollution on the ground with LIF LiDAR
Sergey Babichenko, Natalia L. Fateyeva
14:00 - 14:00

Mapping total suspended matter using ocean color data over La Plata River Estuary, Argentina
14:00 - 14:00

Some Peculiarities of the Preprocessing of Spectral Data and Images
Valentin Ionov Atanassov, Georgi Nikolaev Jelev, Lubomira Hristova Kraleva
14:00 - 14:00

Application of Spectral Fluorescence Signature technique for in-vivo analysis of algae in top layers of Baltic sea waters
Natalia L. Fateyeva, Larisa Poryvkina
14:00 - 14:00

Bio-optical characterization of Asinara Gulf sea water in Sardinia (Italy) using both laser spectrofluorimeter and remote sensing data
Ileana Locola, Daniele Pittalis, Massimo Iannetta, Antonella Lugliè, Bachisio Padedda, Silvia Pulina, Nicola Sechi, Luca Fiorani, Ivano Menicucci, Antonio Palucci
14:00 - 14:00

TOWARDS A VALIDATION OF ENVISAT RA-2 FULL RATE DATA IN COASTAL SYSTEMS: CASE STUDY OF THE GULF OF CADIZ
ISABEL CABALLERO, JESÚS GOMEZ, GABRIEL NAVARRO, PILAR VILLARES
14:00 - 14:00
TURBIDITY PATTERNS AND CLIMATE VARIABILITY IN THE GUADALquivir ESTUARY (SW IBERIAN PENINSULA)
ISABEL CABALLERO, JAVIER RUIZ, GABRIEL NAVARRO
14:00 - 14:00
Remote sensing reflectance and pigment analyses of invasive submers macrophytes
Patrick Wolf, Sebastian Rößler, Thomas Schneider, Arnulf Melzer
14:00 - 14:00

Project EnerBioAlgae (SUDO): Fluorescence spectra techniques for the control of phytoplankton cultures and monitoring of wastewater parameters
Evangelos Spyra,os, Jesus M. Torres Palenzuela, Manuel Martínez Piñeiro, Jose Luis Legido Soto
14:00 - 14:00
Combined topographic-bathymetric data for monitoring biomorphologic effects of the Rance tidal power station management (West France)
Zeineb Kassouk, Benoît Deffontaines
14:00 - 14:00
Remote determination of saline composition of mineral waters with the help of Raman spectroscopy
Sergey A. Burikov, Sergey A Dolenko, Tatiana A Dolenko, Igor G Persiantsev
14:00 - 14:00
Remote determination of temperature and salinity in consideration of dissolved organic matter in natural waters using laser spectroscopy
Tatiana A Dolenko, Sergey A Burikov, Alexey R Sabirov, Victor V Fadeev
14:00 - 14:00
Effects of variations in salinity and nitrogen concentration on the physiological characteristics of phytoplankton obtained using fluorescence spectroscopy techniques
Timofey S. Gostev, Fedor I. Kouzminov, Maxim Yu. Gorbunov, Elena N. Voronova, Victor V. Fadeev
14:00 - 14:00
Oil spill monitoring as the tool for global changes study
Konstantin Ts. Litovchenko, Andrei Yu. Ivanov
14:00 - 14:00
Fluorescent monitoring of the global climate change impact on water photosynthetic organisms. Studies in the Gulf Stream region
Alexey R Sabirov, Maxim Y Gorbunov, Timofey S Gostev, Fedor I Kouzminov, Victor V Fadeev
14:00 - 14:00
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Calculating coastal erosion of the Buor Khaya peninsula
Frank Guenther, Pier Paul Overduin, Alexander Sandakov, Birgit Heim
14:00 - 14:00

Semi-empirical model of backscattering in South Baltic coastal waters
Barbara Lednicka
14:00 - 14:00

Synchronous investigation of soil geometric mean particle diameter and
lime using remotely sensed data
Majid Danesh, Hossein Ali Bahrami, Seyed Kazem Alavipanah, Ali Akbar Noroozi
14:00 - 14:00

16:15 Lake & Coastal Colour
PC Room 02; Session Chairman: Salvatore Marullo
A new resource for global lake surface water temperature and lake
ice-cover data
Stuart N MacCallum, Christopher J Merchant
16:15 - 16:35

Monitoring of invasive aquatic plants by multispectral remote sensing
Sebastian Roessler, Patrick Wolf, Thomas Schneider, Arnulf Melzer
16:35 - 16:55

Object-Oriented Multi-dates Image Classification and Combined
Topographic-Bathymetric Data as Useful Tools to Monitoring coastal zones
Zeineb Kassouk, Zohra Lili chabaane, Benoit Defontaines, Regis Caloz, Mounira
Oualo, Marie José Elloumi, Zeineb Ghrabi
16:55 - 17:15

Classification of coral reef benthic composition using linear unmixing on
spaceborne hyperspectral image
Tamir Caras, Arnon Karniel, Eyal Ben Dor
17:15 - 17:35

19:00 Boat Trip
Dinner
19:00 - 21:30
Fri, 03 Jun 2011  

**5th Workshop on Remote Sensing of the Coastal Zone**

### 08:30 Coastal Habitat
PC Room 02; Session Chairman: Rainer Reuter

**PM 2.5 diurnal and seasonal variations over urban-coastal area**

Viviana Vladutescu, Barry Gross, Fred Moshary, Samir Ahmed
08:30 - 08:50

**The role of earth observation for monitoring coastal evolution and ecosystem response to climate change**

Alison J Houghton
08:50 - 09:10

**Monitoring POSIDONIA OCEANICA coastal ecosystems by means of HR satellite remote sensing multispectral and in situ techniques.**

Flavio Borfecchia, Carla Micheli, Luigi De Cecco, Sandro Martini, Giulio Ceriola, Stelios Bollanos, George Vlachopoulos, Luigi M. Valiante
09:10 - 09:30

**Technological advances for ocean color satellite sensor calibration**

Marco Marcelli, Viviana Piermattei
09:30 - 09:50

### 10:45 Land Remote Sensing
PC Room 02; Session Chairman: R.A. Vaughan

**Probe the Impact of Geometric Standard Deviation of Soil Particles (g) on Remote Sensing Study of Soil Texture**

Majid Danesh, Hossein Ali Bahrami, Seyed Kazem Alavipanah, Ali Akbar Noroozi
10:45 - 11:05

**Potential of Rapideye Image Data for Wadden Sea Monitoring**

Sascha Klonus, Manfred Ehlers, Daniel F. Tomowski
11:05 - 11:25

**Digital aerial photography to monitor changes in coastal areas based on direct georeferencing**

Jose A Gonçalves, Luisa Bastos, José L Pinho, Helena M Granja
11:25 - 11:45

**A novel constraint ICA approach for multi-temporal hyperspectral images analysis**

Karim Saheb Ettabaa, Selim Hmissi, Imed Riadh Farah, Basel Solaiman
11:45 - 12:05
5th Workshop on Remote Sensing of the Coastal Zone

Plenary and Closing Session
A. Palucci & Chairmen
12:05 - 12:15
Evaluation of water pollution by LIF LIDAR

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Keywords: LIF LIDAR, oil spill, detection

Abstract: Within the framework of ERA-AMPERA Program (Project DEOSOM), INOV is developing a modular sensor for oil spill detection and evaluation. The sensor is based on laser-induced fluorescence (LIF LIDAR). It may be installed aboard watercraft and used for intensive surveillance of harbourages, rivers, channels, and coastal waters. The report presents experimental results obtained up to now with the LIF LIDAR detector prototype and typical crude brands, transported and processed in the Mediterranean region, which include: (i) investigation of dynamics of oil film on the water surface in the laboratory conditions, (ii) study of LIF spectra of spills depending on the oil type and film thickness for several oil types, (iii) detection of an experimental spill in the Atlantic Ocean coastal waters near Vigo (Spain), in which less polluting agent, rhodamine, was used instead of oil, (iv) LIF spectra calibration using water Raman scattering peak and (v) detection of the LIF spectra of dissolved organic matter.

The results obtained testify good applicability of the LIF LIDAR technique for oil detection and possibility of automatic oil-spill surveillance by analysis of the LIF spectra.
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