

BELGIAN SCIENCE POLICY



HYPER@SADC: ATTENDANCE CALL



HyperTeach@SADC Training Course (19-22 November, 2007) & Hyperspectral Research Strategy Workshop (23 November, 2007)

OBJECTIVE

Imaging spectroscopy – (IS) is becoming a major remote sensing technique for technology and application developers. This field of remote sensing provides relevant input to numerous applications, since an imaging spectrometer samples hundreds of narrow contiguous spectral bands throughout the visible to short wave infrared electromagnetic spectrum.

HYPER@SADC is a joint initiative of UNESCO, IOC/UNESCO, VITO, CSIR, SunSpace and the University of Stellenbosch and will be implemented in the framework of the FET-REMSENS project funded by the Flanders-UNESCO trust fund. The FET-REMSENS project is developed in the framework of the Global Ocean Observing System in Africa (GOOS-AFRICA) and the UNESCO Crosscutting Project on the Applications of Remote Sensing for Integrated Management of Ecosystems and Water Resources in Africa (ARSIMEWA) and the FET-WATER program.

All policy-makers, researchers and potential users of airborne and spaceborne data who want to become acquainted with Imaging Spectroscopy are invited to participate in the HyperTeach@SADC Training course in Imaging Spectroscopy* (19-22 November, 2007) and the Hyperspectral Research Strategy Workshop (23 November, 2007) to be held at the premises of the University of Stellenbosch, Stellenbosch, South Africa. There will be an equal focus on theory and practical hands-on exercises during the HyperTeach@SADC course. After two days of theoretical introduction, the participants can decide which of the two applications (water and aquatic ecosystems or biodiversity) they prefer to follow during a two-day parallel session with hands-on exercises. **Please visit www.hyperteach.co.za for more information.**

For the practical course ENVI® software will be used. We would like to acknowledge ITT Visual Information Solutions France for providing ENVI licenses during the HyperTeach@SADC training course.

Course instructors are Dr. Ils Reusen and Dr. Bart Deronde (VITO)

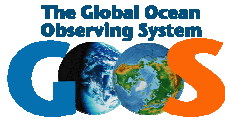
SCIENTIFIC COMMITTEE

Justin Ahanhanzo (UNESCO, GOOS-AFRICA & Remote Sensing in Africa; team leader)
Alexandros K. Makarigakis (UNESCO, WINDHOEK office Namibia)
Mika Odido (UNESCO; ODINAFRICA project manager)
Ils Reusen (VITO, Belgium; HyperTeach coordinator)
Jan Van Aardt (CSIR, South-Africa)
Sias Mostert (SunSpace, South-Africa)
Adriaan van Niekerk (University of Stellenbosch, South-Africa)

Registration:** Please visit www.hyperteach.co.za to obtain a registration form

* Basic remote sensing knowledge is required in order to participate in the HyperTeach@SADC training course

** Candidates will be selected by the scientific committee on the basis of education, expertise and motivation



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TIME SCHEDULE

- 1 September, 2007** : First announcement
- 30 September, 2007** : Deadline registration
- 8 October, 2007** : Notification of acceptance
- 19-22 November, 2007** : HyperTeach@SADC Training course

PROGRAM

- During the **2-day theoretical course (November 19-20, 2007)** the following topics will be covered:
 - physical basics of spectroscopy
 - imaging spectroradiometers
 - airborne campaign planning
 - spaceborne data availability
 - field equipment
 - sensor calibration
 - pre-processing
 - geometric and atmospheric corrections
 - data analysis and validation
 - 2 applications: water and aquatic ecosystems, biodiversity
- During the **2-day practical course (November 21-22, 2007)**
 - ... the **'water and aquatic ecosystems'** students will learn
 - how in-situ collected spectra, measured with the GER spectroradiometer, can be used to observe how light at different wavelengths is influenced by the water column
 - why and how hyperspectral data, which is already radiometric, geometric and atmospheric corrected, needs additional corrections for sun glint to perform the basic steps of satellite image processing, including identification of bad data
 - how to perform a benthic cover classification on a part of a coral reef
 - what happens with light at the air-water interface
 - about the WATCOR functionalities
 - how to retrieve the required atmospheric input parameters for WATCOR
 - how to interpret WATCOR output images
 - how to make and process in-situ reflectance measurements above water
 - how to find a suitable TSM algorithm
 - how to derive a TSM map from an AHS image and visualize it with an appropriate color scale.
 - ... the **'biodiversity'** students will learn how
 - to perform an atmospheric and geometric correction of airborne hyperspectral images (including field measurements) and how to prepare airborne hyperspectral images for later classification
 - to measure leaf reflectance spectra, to distinguish different vegetation species by their leaf reflectance spectra and to use different indices to characterize these differences
 - to classify vegetation species using spectral similarity measures
- **Workshop and Strategy Session (November 23, 2007):** The workshop and strategy session will serve as follow-up to HyperTeach@SADC to highlight current SADC hyperspectral research, while also providing an opportunity for stakeholders (e.g., private public, research, educational, etc.) to discuss SADC hyperspectral remote sensing strategy. It will consist of research presentations (morning) and strategy discussion (afternoon). Please visit www.hyperteach.co.za for more details on the program and the planning committee.