

NPL activities relevant to CEOS

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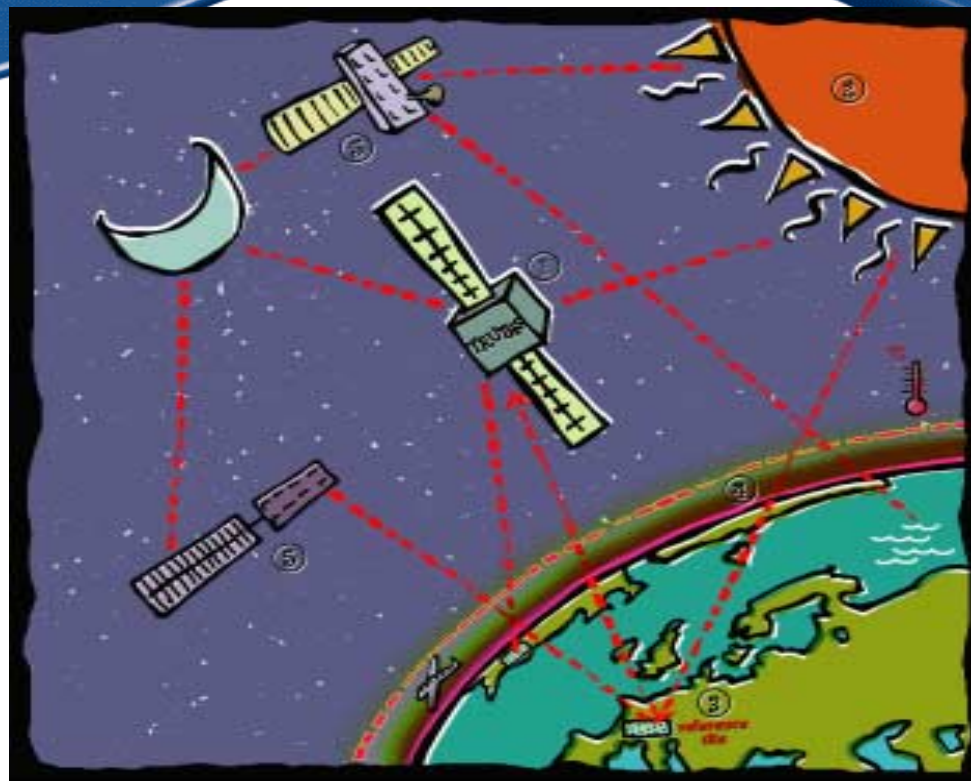
- Focus on field spectroscopy
 - Reviewing error sources on field spectrometers
 - E.g – ASD
 - what needs calibration ?
 - how often ?
 - most effective method
 - what is optimum performance
 - Subtleties in useage
 - Evaluate/design low cost alternatives
 - Aim to provide input to establishment of best practise (IVOS)

- **Design now established and work started to develop a field spectral-goniometer for surface BRDF (hemisphere) for NERC**
 - 35 channels,(7 arms 5 variable azimuth)
 - Will also develop optimum calibration/characterisation strategy and standards (reflectance/radiance/geometric)
 - Evaluate uncertainties for different target types
 - **Sponsoring Phd at Swansea University to perform sensitivity analysis on inputs needed to derive data products** e.g vegetation cover type, cover fraction, LAI, fAPAR, Leaf chlorophyll, albedo, aerosol optical thickness.
 - Utilising a 3 D land surface radiative model (FLIGHT) and 6S atmospheric code with inputs from look-up tables.
- Aim 1/ to identify uncertainty needed now and future.
2/ potential accuracy possible and consequential demands on future sensors

Activities 3

CTRUTHS: Traceable Radiometry Underpinning Terrestrial- and Helio- Studies

Satellite based mission to make SI traceable measurements of solar radiation incident on and reflected from the Earth and to transfer its unprecedented calibration accuracy to other satellite based EO instruments through the calibration of reference targets such as the Sun, Moon and Earth deserts.



Solar view

TSI	0.01%
SSI (200 to 2500 nm)	0.1 to 0.5 %

Earth view

- Hyper-spectral (380 to 2500 nm)
- ~ 25 m spatial resolution / multi - angle
- Spectral radiance uncertainty < 0.5 % (all bands)
(use of novel in-flight calibration system)

NCAVEO (Network for Calibration and Validation of Earth Observation data)

- **UK based “knowledge transfer network”** led by Univ of Southampton, Surrey space centre and NPL
 - Information exchange between users, academia, industry
 - » Initial meeting in Jan 05 (25 attendees)
 - Establish web site as interface: www.ncaveo.ac.uk
 - Initial objectives/activities similar to IVOS / LPV and thus acts as a UK node for CEOS inputs and outputs to IVOS and LPV
 - » *Establish data base of field sites and instruments*
 - » *Identify case studies for Cal/Val*
 - » *Pool knowledge and develop guidance on atmospheric correction*
 - » *Establish best practise in cal/val*
 - Annual technical meetings expanding membership to EU
 - 3 yr funding for website and meeting organisation

NCAVEO home page



The screenshot shows a web browser window with the address bar displaying <http://www.ncaveo.ac.uk/>. The page features a navigation menu on the left with sections like Home, Overview, Calibration, Validation, Themes, Resources, and Contact Us. The main content area is titled 'Home' and welcomes visitors to the Network for Calibration and Validation of Earth Observation data. It provides a brief overview of the network's purpose and funding, followed by a news section with three items: SMOS AO Cal/Val..., WGCV-23 meeting and field measurements exercise: Cordoba, Argentina 3-5 March..., and New ISPRS Working Group on Automatic Calibration and Orientation of Optical Cameras... Each news item includes a short description and a 'read more' link. On the right side, there is a 'Partners' list with various organizations and institutions. The page also includes search bars for general and Google Scholar searches, and a 'Last updated' timestamp at the bottom right.

NCAVEO

Sections

- Home
- Overview
- Calibration
- Validation
- Themes
- Resources
- Contact Us

Search

Search

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Home

Welcome to the Network for Calibration and Validation of Earth Observation data.

NCAVEO is a knowledge transfer network funded by the Natural Environment Research Council. It is based at the University of Southampton and currently comprises over 20 members drawn from a number of universities, research institutes, government laboratories and data providers. Others with an interest in the calibration and validation of EO data are very welcome to join the network.

The network held its first meeting on 24th January 2005 and the matters discussed will be reported on this website shortly.

News

SMOS AO Cal/Val...

The 1st Announcement of Opportunity for the SMOS Mission aiming specifically at Calibration and Validation activities is open now.
[read more](#)

WGCV-23 meeting and field measurements exercise: Cordoba, Argentina 3-5 March....

CEOS Working Group on Calibration & Validation-23 meeting
[read more](#)

New ISPRS Working Group on Automatic Calibration and Orientation of Optical Cameras...

The major goal of WG III/1 for the years 2004-2008 is to promote within ISPRS more or less fully automatic methods for calibration and orientation of images without requiring markers on the object. The WG aims to test the current state-of-the-art methods with respect to general applicability and robustness, and thereby foster further refinement and improvement of these methods.
[read more](#)

Partners

- » CASIX / PML
- » CCLRC RAL
- » CEH Manks Wood
- » CLASSIC
- » defra
- » Environment Agency
- » Infoterra Ltd
- » National Physical Laboratory
- » NERC PSF
- » NPA Group
- » QinetiQ
- » RSAC Ltd
- » Sira Technology
- » Surrey Satellite Technology Limited (SSTL)
- » Surrey Space Centre
- » University of Exeter
- » University of Newcastle
- » University of Nottingham
- » University of Southampton

GeoData Institute

SMOS

Posted 17th February 2005

isprs

International Geomatics Society

Posted 9th February 2005

Last updated 18/02/2005