



International Ocean Colour Science
Meeting 2013

Advancing Global
Ocean Colour
Observations

IOCCG Training Initiatives

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IOCCG Mandate

To provide a common voice for the user community

Advanced training courses to foster expertise in using ocean-colour data

Liaise with space agencies

Facilitate free and open access to ocean-colour data from all agencies

Ensure continuity and quality of the ocean-colour data stream

Advocate the importance of ocean-colour data to the global community (informative website, newsletters, brochures, IOCCG reports, training...)



Zanzibar, October 2009



IOCCG Training Initiatives


Intensive Introductory Training Courses (IOCCG sponsored or co-sponsored)


- Courses generally 2 weeks long, often given in developing countries, students often have limited knowledge of ocean colour radiometry
- Lectures on theoretical basis of optical radiometry
- Hands-on practical sessions (e.g. image processing and analysis using SeaDAS/BEAM, student projects). Computers provided for each student!
- Focus on key applications tailored to the region
- Some courses include field (cruise) or lab work


High-Level Training Courses (scientific research)


- To maintain a highly skilled and trained scientific research community, with the necessary background and expertise to address current critical issues
- Target students who have a good background in ocean colour radiometry and have worked extensively with ocean colour data


Reports of Past IOCCG Training Courses & Workshops


 **July 2012 - Villefranche-sur-Mer, France.** IOCCG Summer Lecture Series 2012: Frontiers in Ocean Optics and Ocean Colour Science [[View course report and lecture synopsis](#)]. [[View Summer Lecture Series website](#)].


 **October 2011 - Vladivostok, Russia.** NOWPAP/PICES/WESTPAC Joint Training Course on Remote Sensing Data Analysis, co-sponsored by IOCCG [[View course report](#)]. [[View student report](#)].


 **February 2010 - Kochi, India.** Remote Sensing Applications in Fisheries and Ecosystem Analysis. Training course co-sponsored by IOCCG and held in conjunction with the SAFARI Symposium on Remote Sensing and Fisheries [[view report](#)].


 **October 2009 - Zanzibar, Tanzania.** Methods and Applications of Ocean Colour Remote Sensing in African Coastal and Regional Seas. Organised by the [Joint Research Centre \(EU\)](#) and co-sponsored by IOCCG. [[Course synopsis](#)] [[Course Report](#)]


 **August 2009 - Lauenburg, Germany.** IOCCG training course on "Inversion Methods in Ocean Colour Remote Sensing". Organised by Dr. Roland Doerffer of the [GKSS Research Center, Institute for Coastal Research](#). [[Course summary](#)]. [[Participants List](#)]


 **April 2009 - Hangzhou, China.** International Ocean Colour Workshop held in conjunction with the IOCCG Committee meeting. Organized by Prof. Delu Pan and colleagues, SOED, Second Institute of Oceanography, SOA, China. [[Workshop agenda and photos](#)].

 **September 2007 - Mombassa, Kenya.** Methods and Applications of Ocean Colour Remote Sensing in African Coastal and Regional Seas. Organised by the [Joint Research Centre \(EU\)](#) and co-sponsored by IOCCG. [[view report](#)]

 **May 2007 - St. John's, Canada.** IOCCG training course on "Analysis and Applications of Satellite-derived Ocean-Colour Data" held at Memorial University of Newfoundland. [[view report](#)]

 **October 2005 - Ispra, Italy.** IOCCG training course on "Methods and Applications of Ocean Colour Remote Sensing in Coastal and Regional Seas" held at the Joint Research Center (JRC). [[view report](#)]

 **April 2005 - Montevideo, Uruguay.** IOCCG training course on "Remote Sensing of Ocean Colour in Open, Coastal, and Estuarine waters" [[view report](#)]

 **January 2005 - Isla de Margarita, Venezuela.** Second [ANTARES](#) workshop co-sponsored by IOCCG. [[view report](#)]



July 2003 to February 2004, Southern Hemisphere. [Oceanographic training on the BEAGLE Southern Hemisphere cruise](#).



October 2003 - Brisbane, Australia. 2nd IOCCG Pacific Ocean Remote Sensing Capacity Building Workshop. [[view report](#)]



September 2003 - Denpasar, Bali, Indonesia. International Symposium on Remote Sensing and Ocean Science in South East Asia, co-sponsored by IOCCG. [[view report](#)]



July 2003 - INIDEP, Mar del Plata, Argentina. First [ANTARES](#) Workshop on bio-optics and ocean colour, co-sponsored by IOCCG. [[view report](#)]



October 2002 - University of Concepción, Chile. IOCCG training course on Primary Production. [[view report](#)]



December 2001 - Cape Town, South Africa. IOCCG training course on Remote Sensing of Ocean Colour: Analysis and applications. [[view report](#)]



October 2001 - Bogor, Indonesia. Training Course on Remote Sensing and GIS for Coastal Applications, co-sponsored by IOCCG. [[view report](#)]



September 2001 - Noumea, New Caledonia. IOCCG workshop on Remote Sensing Resources for Marine Management [[view report](#)]



February 2001 - Ahmedabad, India. IOCCG International Training Course on Ocean Colour: Techniques and Applications. [[view report](#)]



December 2000 - Bangkok, Thailand. Asian Remote Sensing Training Course on Ocean Colour, co-sponsored by IOCCG. [[view report](#)]



September 2000 - Erdemli, Turkey. IOCCG Training Course on Remote Sensing of Ocean Colour. [[view report](#)]



November 1999 - Klong Luang, Thailand. IOCCG Training course: Applications of Marine Remote Sensing Asian Institute of Technology (AIT). [[view report](#)]



January 1999 - Bangalore, India. JGOFS Symposium and Training course: Biogeochemistry of the Arabian Sea: Synthesis and Modelling. [[view report](#)]

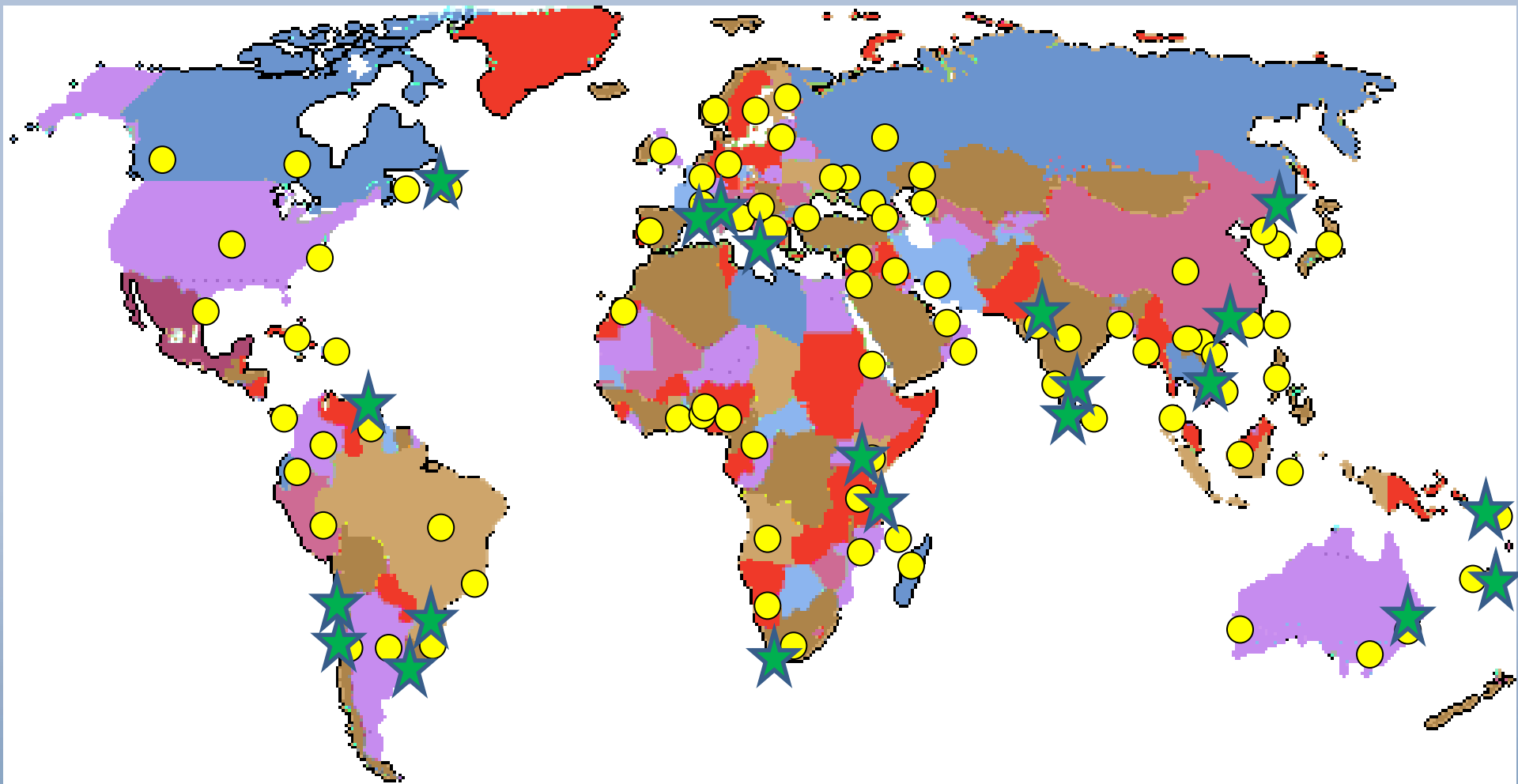


November 1997 - Olmué, Chile. Intensive Course on Remote Sensing of the Ocean: Applications for Ocean Colour, Temperature, Wind Stress and Altimetry. [[view report](#)]



★ IOCCG training courses and origin of students ●

Approximately 500 students from 86 different countries have received training in 25 different IOCCG training initiatives.





Chile (Oct 2002)



Intensive Training Courses

Turkey (Sept 2000)



Zanzibar (Oct 2009)



India (Feb 2010)



IOCCG Advanced Training Courses

- **Inversion Methods in Ocean Colour Remote Sensing** (Germany, 2009) – organised by Roland Doerffer. All participants had a strong mathematical background and experience in programming. Objectives: to prepare bio-optical models and training data sets for inversion methods, and to teach participants how to use various inversion techniques.
- **IOCCG Summer Lecture Series** (France, 2012)





IOCCG Summer Lecture Series

- First IOCCG Summer Lecture Series - LOV Villefranche, July 2012
- Dedicated to high-level training on cutting edge research and critical issues in ocean colour science (13 prominent lecturers)
- Very high demand: 106 applications from well qualified students, 17 selected

Important components:

- Interactive discussion sessions between the students and lecturers on various topics, including their own research
- All lectures available as videos and PowerPoint presentations on IOCCG website

Overwhelming success – excellent feedback from students. IOCCG plans to run these courses every 2 years. Next training course scheduled for summer 2014 in Villefranche!





Other IOCCG Capacity Building Initiatives

- IOCCG Fellowship Programme: to provide scientists from developing countries with the opportunity for gaining training in a foreign institute for 1-3 months (2002-2005)
- JAMSTEC Southern Ocean Cruise (July 2003 – Feb 2004) in conjunction with POGO
- International Ocean Colour Workshop (April 2009, Hangzhou, China) >70 students
- Special Lecture Series on Ocean Colour Remote Sensing at Udayana University (Denpasar, Indonesia) broadcast to Masters graduate students in Yamaguchi University, Japan (February 2012)



IOCCG Scientific Working Groups

- Investigate various aspects of ocean-colour technology and its applications
- IOCCG Reports often used as a teaching aid (13 reports published to date, plus a handbook). Available at: www.ioccg.org

Report 1

- *Minimum Requirements for an Operational Ocean-Colour Sensor (1998)*

Report 2

- *Status and Plans for Satellite Ocean-Colour Missions (1999)*

Report 3

- *Remote Sensing of OC in Coastal and Other Waters (2000)*

Report 4

- *Ocean-colour, Level-3, binned data products (2004)*

Report 5

- *Remote Sensing of IOPs: Fundamentals and Algorithms (2006)*

Report 6

- *Ocean-Colour Data Merging (2007)*

Report 7

- *Why Ocean Colour? The Societal Benefits of Ocean-Colour Technology (2008)*

Report 8

- *Remote Sensing in Fisheries and Aquaculture (2009)*

Report 9

- *Partition of the Ocean into Ecological Provinces (2009)*

Report 10

- *Atmospheric Correction (2010)*

Report 11

- *Bio-Optical Sensors on Argo Floats (2011)*

Report 12

- *Ocean-Colour Observations from a Geostationary Orbit (2012)*

Report 13

- *Mission Requirements for Future Ocean-Colour Sensors (2012)*

Handbook

- *Handbook of Satellite Remote Sensing Image Interpretation: Applications for Marine Living Resources Conservation and Management (2011)*

