

## 4th SOLAS SSC meeting

Bergen, Norway, June 16-19th 2004

**SSC members present:** Barry Huebert, Bill Miller, Christiane Lancelot, Elsa Cortijo, Gerrit de Leeuw, Ken Denman, Mitsuo Uematsu, Osvaldo Ulloa, Patricia Matrai (Vice-Chair), Peter Liss (Chair), Peter Schlosser, Shigenobu Takeda, Tim Jickells, Truls Johannessen, Ulrich Platt

**Apologies:** Dileep Kumar, Doug Wallace, Wade McGillis.

**Others present:** Vladimir Ryabinin (WCRP), Wendy Broadgate (IGBP), Ed Urban (SCOR), Maurice Lévassieur (Canadian SOLAS and Implementation Group I co-chair), John Plane (Implementation Group I co-chair), Phillip Williamson (UK SOLAS Science co-ordinator), Casey Ryan (SOLAS International Project Officer)

Peter Liss welcomed everybody to the meeting and introduced the new members of the SSC (OU, ST, CL and WM [absent]). TjH and his staff were thanked for hosting us and supporting the meeting.

### Progress since last meeting

The **Science Plan and Implementation Strategy** was published in Feb 04 after 4 months of work on the layout at the IGBP Secretariat. Having an *Implementation Strategy*, rather than an *Implementation Plan*, is causing some confusion; we need to highlight that detailed *Implementation Plans* will be available in due course.

IGBP mailed the document to 748 people and the SOLAS office sent it to the 174 who requested it on the web, as well as the SSC, SOLAS National representatives, and Implementation Group members. The IPO also mailed it to a list of funding agencies. Approx 2000 people downloaded the Plan from the web.

**All to send the IPO details of funding agencies that would be interested in receiving the Science Plan and Implementation Strategy and future SOLAS mailings**

The SOLAS IPO has received funding from the UK Natural Environment Research Council of £800 000 over 5.5 years. This will provide 2 scientific officers and some secretarial help along with running costs and some travel expenses. Casey Ryan is the Project Officer and efforts are underway to appoint an Executive Officer.

The **Task Team on Organic Aerosols** (IGAC/SOLAS/iLEAPS) met in Hyttiala, Finland, May 2004. BH represented SOLAS. A report will be circulated by the autumn.

**IPO to publicise the resultant paper to SOLAS community**

The **Task Team on Halogens in the Troposphere** (SOLAS/IGAC) held its first meeting in May. A full report will be available by the SOLAS Open Science Conference. This group will become a sub-group of Implementation Group I and now needs to move to mobilise national resources to implement the science.

The effect of halogen oxides on the deposition of Hg was considered a major issue and needs to be highlighted as a SOLAS topic.

**Atmosphere-Ice Chemical Interactions Task Team** will start to move forward after the upcoming SOLAS and IGAC open science conferences.

The Ocean-Atmosphere-Sea Ice-Snow project has been endorsed by SOLAS. It has published a Science Plan, which is available at: <http://www.uea.ac.uk/env/solas/OASIS/OASIS.html> (the authors welcome comments). This may provide some input into the renewal proposal for Canadian SOLAS.

This has links with the International Study of Arctic Change (international SEARCH) and may be complemented by the work of the CliC Arctic Panel.

**The International Polar Year** runs from 1st March 2007 - 1st March 2009. It could provide a platform for OASIS, HitT and many other areas of SOLAS, including an 'armada' for pCO<sub>2</sub> measurements in the undersampled Southern Ocean. Now is the moment for ensuring that the ICSU IPY Planning Group is made aware of this and SOLAS needs to present a co-ordinated input. The Implementation Groups need to consider this.

**SSC members to provide input to their national IPY committees. IPO and VR to do the same at an international level.**

**The Iron Fast Track** project (IGBP/SCOR) meet in April 2004. It will provide a rapid assessment of the global-scale cycling of iron that cross cuts many international projects. A paper will soon be submitted to a high profile journal.

**The Ocean in a High CO<sub>2</sub> World** was the topic of a recent symposium organised by SCOR and IOC. The consensus from the meeting will need to be incorporated into the implementation plans of SOLAS Activity 3.2.

GdL co-convened a workshop entitled "**Toward a Universal Sea Spray Source Function**". The report will be circulated around the SOLAS community and to IMP 2.

**GDL to forward report to the IPO**

**The International Ocean Carbon Coordination Project** organised a workshop in Tsukuba Japan (lead by Y.Nojiri; DW, DK and Tjh attended from SOLAS) on Ocean Surface pCO<sub>2</sub>, Data Integration and Database Development. This covers a lot of the work of SOLAS IMP 3, particularly Activity 3.1. Rationalising the structure of international coordination of marine carbon research is a complex and ongoing task and SOLAS will have to work closely with the IOCCP or its successor.

**Tjh, EU, VR, WB, and PSL to continue to work with IMBER, CLIVAR, IOC and other interested parties to rationalise international carbon coordination.**

### **Progress of other groups**

The **IMBER** Science Plan and Implementation Strategy is currently being reviewed. It contains some overlap with the SOLAS Plan primarily on the topics of trace metal deposition and on the effects of global change on the air-sea CO<sub>2</sub> flux and N<sub>2</sub>O. PSL will attend the 1st IMBER SSC meeting and BM will continue to liaise between the two projects.

The new plans for **IGBP integration** were presented. The suggestion is for 3 panels (sub

groups of the SC) to integrate the work of the core projects in each domain (Land, Ocean, Air). These would be able to suggest activities for the projects and would ensure that we are not leaving gaps in the research. Also, a new project called AIMES (Analysis, Integration and Modelling of the Earth System) is being created to replace GAIM. Several comments were made:

GAIM never achieved efficient flow of information from the core projects. It is not clear how this will be different with AIMES. There is also a need to ensure that there is no terrestrial bias.

In terms of Earth system modelling, SOLAS will also feed into COPES (Coordinated Observations and Prediction of the Earth System), the WCRP integration project. COPES and AIMES seem to have similar ambitions.

The IGBP panels are creating a structure before the scientific questions have been posed. What if the questions are best answered by assessing global cycles of elements (e.g. Fe), not by domains? What is the role of the SC-IGBP in identifying key issues for the projects? The proposed structure puts a heavy burden on the interface projects.

**WCRP** is also looking to become more integrative and is developing its strategy for future work. COPES aims "to facilitate prediction of the climate/earth system variability and change for use in an increasing range of practical applications of direct relevance, benefit and value to society" and is part of WCRP's aim to move towards an operational climate observing, and then prediction, system.

**AMMA** ([http://www.joss.ucar.edu/amma/amma\\_summary.htm](http://www.joss.ucar.edu/amma/amma_summary.htm)) aims to improve our understanding of the West African Monsoon and its influence on the physical, chemical and biological environment regionally and globally. There is a clear SOLAS interest in AMMA, but it is not feasible for US SOLAS to participate in a 2006 experiment. UK SOLAS is developing links with (UK)AMMA.

**VOCALS** (the VAMOS Ocean Cloud Atmosphere Land Study) aims to better understand and simulate how marine boundary layer cloud systems surrounding the Americas interact with the coupled ocean-atmosphere-land system on diurnal to interannual time-scales. In 2007 they are proposing a "radiator fin" transect between a WHOI buoy and the coast of South America. SOLAS might be able to link the Latin American oceanographic community to the physical work being proposed by US scientists.

**OU, along with IMP 1 and 2, to publicise the plan to the oceanographic community in Latin America.**

**GEIA** (the Global Emissions Inventory Activity) contacted SOLAS with a view towards extending its work to oceanographic emission data. There are several developments that will be needed if SOLAS-type data is to be available through GEIA, but this may offer a one-stop shop for global emissions data and maybe parameterisations.

**IPO to add a link on the SOLAS web site to GEIA and the presentation that was made to GEIA in June 2004.**

**GEOTRACES** is a SCOR chemical oceanography project planning a major set of full-depth N-S and E-W transects in all the major basins. They will be measuring several elements of interest to SOLAS (e.g. Fe, Mn, Cu) and aerosol deposition. There will be berths for a SOLAS scientist on many of their cruises. Tji is a member of the international planning group.

**Tji to ensure that the work of GEOTRACES is publicised in the SOLAS community and to liaise between the projects.**

**IPCC 4th Assessment.** KD is co-authoring a chapter of the report of WG I on biogeochemical feedbacks.

### **National Reports (see website for details)**

The **Canadian** SOLAS network will come to an end in July 2006. Planning for a renewal proposal is beginning.

**Japan** SOLAS have funding for a coordinating committee and a website. They have decided to prepare a large SOLAS proposal. SEEDS II, a 2-ship iron enrichment experiment in July-Aug 2004, will involve a huge suite of measurements and collaboration with the US and Canadian SOLAS.

**China (Beijing)** has funding for a SOLAS programme, with a budget of 8 Million RMB (~1M USD) from 2004-2007 focussing on the area of the Yellow Sea & the South China Sea.

**UK SOLAS** (5 years, £12M) is currently soliciting expressions of interest from the UK community. By October it will be clearer what fieldwork they are planning.

A **US SOLAS** advisory group has been constituted under the leadership of Wade McGillis. They will be preparing a US SOLAS Implementation Plan. Several US SOLAS projects have already been funded.

**Norwegian SOLAS** has just submitted a proposal titled BioGeoChemClim. Frode Stordal is the new national representative.

**Chile.** There are opportunities for oceanographic and atmospheric collaboration, e.g. VAMOS.

**France** . SOLAS is part of the PROOF project (ends 2005) and several projects have registered as SOLAS endorsed projects. There is also much other work ongoing in other projects like PATOM.

**Belgium.** There are 10 research projects that contribute to many areas of SOLAS science.

**New Zealand SOLAS** has conducted two Lagrangian experiments, one a Fe budgeting experiment and the other a dual-tracer, iron enrichment experiment. They also have a dust-monitoring programme in collaboration with Australian scientists. Plans for further SF<sub>6</sub> experiments are being made.

**Brazilian SOLAS** has 6 registered projects.

**Germany:** A proposal for a D-SOLAS programme has been submitted.

**EU SOLAS.** The latest Call of FPVI includes a SOLAS topic. The IPO is facilitating consortium building (see SOLAS web). There are also possibilities for an ESF or COST scheme that the IPO is investigating.

## **Implementing SOLAS**

### **Implementation Group 1**

Implementation Group 1 will meet from the 10-12<sup>th</sup> Oct for the first time, under the chairmanship of Maurice Lévassieur and John Plane. The challenges and aims of this group were discussed. There is a possibility of Belgium funding for this group, which CL and PSL will explore.

The Group will aim to publish its Plan by the end of 2004. Before its first meeting it will solicit information from SOLAS national representatives and others on planned experiments so that the group can start to coordinate and Plan international activities from the outset. This will provide an opportunity for people to promote their science.

The science of each Activity was discussed and suggestions were made to the co-chairs. Links with Focus 2, IMBER, GEOTRACES etc were all highlighted

### **Implementation Group 2 and WGSF**

The draft of Implementation Plan 2 was discussed and many comments made and incorporated into the text. It will be published on the web this summer. Key points were the need to justify the number of experiments called for, greater emphasis on the role of surface films and including eddy covariance measurements of the DMS flux as part of the SOLAS suite of measurements.

WGSF (The WCRP Working Group on Surface Fluxes) will meet prior to the Halifax conference. The Chair of the group, Chris Fairall, is a member of IMP 2. The group aims to review the requirements of the different WCRP programmes for air-sea fluxes; to develop communication and co-ordination between the research initiatives of WCRP and IGBP on air-sea fluxes; and to encourage research and operational activities aimed at improving the knowledge of air-sea fluxes. The division of labour between WGSF and SOLAS IMP 2 is being discussed between Chris Fairall, VR, WM and PSL.

### **Implementation Group 3**

Implementation Plan 3 is very comprehensive, but requires more details to be added. Many comments were made, and these will be incorporated into the Plan.

The science of Activity 3.2 of SOLAS is also contained within the IMBER Science Plan and Implementation Strategy. Thus this work will be implemented jointly with IMBER. This section of the Implementation Plan will be written jointly with IMBER and marked clearly as such within the SOLAS Focus 3 Implementation Plan. A meeting will be held with IMBER to finish this section of the Plan.

The individual activities will be published as they are completed.

## The SOLAS Implementation Plans

All of the Implementation Plans will be published on the web as soon as they are completed and community input will be invited. They will be revised and published in hard copy when all 3 are completed, and subsequently updated only on the web. Prior to hard copy publication, a group of SSC members and the chairs of the IMP groups will review all 3 Plans for constancy and overlaps.

At this point, the evolution of SOLAS was discussed. Once the 1<sup>st</sup> phase of national programmes nears its end, we will be able to plan international, trans-foci experiments. We will need to consider our priorities and the sequencing of international studies very carefully.

## Data Management

The recommendations from the SCOR/IGBP data management meeting were accepted (see <http://www.jhu.edu/scor/DataMgmt.htm>).

However, SOLAS does not have the resources to support a data manager at present, and until this can be found the IPO can make little progress on this issue, although the Data Management Task Team will meet this year.

## The SOLAS Open Science Conference

Oct 13-16, Halifax, Canada

So far over 170 people have registered for the conference. Full details of the talks and poster session can be found on the web.

SSC members agreed to chair the several discussion sessions at the conference and to forward a description of these to the IPO.

The poster sessions will not be under the SOLAS Foci heading, but instead, posters will be allocated randomly between the 3 sessions.

The abstracts will be available on a CD, and the titles and authors of each abstract will be included within the registration pack.

SCOR will pay for an advertisement in EOS.

## Other Conferences and Events

SOLAS/IGAC/WMO, Cape Town 18-23, Sept 2006

It was agreed that this would be a joint SOLAS/IGAC event. Tji will serve on the scientific committee and it will be organised by CACGP.

<b>All SSC members to send suggestions of topics, speakers etc to Tji</b>
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A joint conference with IMBER, perhaps in 2008, was also felt to be a good idea.

SCOR *Phaeocystis* working group Sept. 2005 & 37th International Liège Colloquium on Ocean Dynamics: Gas Transfer At Water Surfaces, Liège, Belgium, May2-6 2005.

SOLAS will support these events by advertising and promoting them. The IPO will also try to obtain funds to support young scientists to attend.

SCOR projects meeting, Venice, Italy, 23-24 Sept

This aims to bring together representatives of the major international ocean research and observation projects and programs to discuss common opportunities, issues and problems. SOLAS will attend and issues for discussion include the continuation of the TRMM satellite, the expansion of GOOS to include chemical sensors, and the global carbon observing system.

WCRP Project Open Science conferences

SPARC, 1-6 Aug 2004; CliC 11-15 April 2005; GEWEX, June 2005.

### **SOLAS Summer School 2005**

After the success of the 2003 school, it will run again in 2005 (29 Aug -10 Sept, Corsica, France) and 2007, again under the leadership of Corinne Le Quéré. The SSC thanked Corinne for her hard work.

The Scientific Steering committee for the school consists of Corinne Le Quéré, Peter Liss, Véronique Garçon, Wade McGillis, Maurice Lévassieur, Ulrich Platt, Mitsuo Uematsu and Rik Wanninkhof.

### **SSC Membership**

Members were asked to indicate to PSL for how many years they wished to remain on the committee. The 4 new members have been appointed for a minimum of 3 years, so if we are to ensure that there is a staggered rotation off the committee, 'original' members' can be extended for 0, 1 or 3 years.

### **Next Meeting**

Early June was considered a good time of year. The location will be decided in due course, with a possibility of a meeting in Tokyo.

Thanks to Truls for a well organised meeting