Towards establishment of the surface flux group

Draft by Ken Denman, Sergey Gulev, Vladimir Ryabinin and Peter Schlosser

JSC-24, Reading UK, 17-22 Mar 2003

General:

To meet the scientific requirements of different programmes of WCRP and its co-operation with IGBP programmes (decision of the 23rd JSC Session, Hobart, Australia, 2002), a WCRP Working Group on Surface Fluxes (WGSF) [*?Coordinating Committee on surface fluxes (CCSF)?*] should be established.

WGASF: 1997-2001

Outcomes:

Final report "Intercomparison and Validation of Ocean-Atmsophere Flux Fields", WCRP-112, 2001, 506 pp.

Global Flux Fields Catalogue:
www.pcmdi.llnl.gov ***www.sail.msk.ru*** ***www.soc.soton.ac.uk***

WCRP/SCOR Workshop on air-sea fluxes, 20-24 May 2001, Washington DC, Bolger Centre. (See recommendations)

Special issue of J.Climate (2003, vol. 16, No. 4) "Intercomparison and validation of ocean-atmosphere flux fields"

TORs for WGSF (as proposed at JSC-23 in Hobart):

- *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;*
- *to encourage research and operational activities aimed at improving the knowledge of air-sea fluxes;*
- *to keep the scientific community and the JSC informed of progress achieved through regular reports, World Wide Web, and as necessary, scientific workshops.*

Proposed specific objectives of WGSF for the nearest perspective:

ongoing compilation, evaluation and intercomparison of existing flux data sets, including those of biogeochemical fluxes;

further improvement of parameterisations of physical and biogeochemical fluxes, quantification of uncertainties in surface flux products and development of metadata for these products;

assessment of model sensitivity to and limits on predictability from errors associated with surface fluxes and development of objective analysis schemes and data assimilation techniques in support of the coupled system (re-) analysis;

development of strategy for merging and combining surface flux data sets to meet the requirements of WCRP and IGBP;

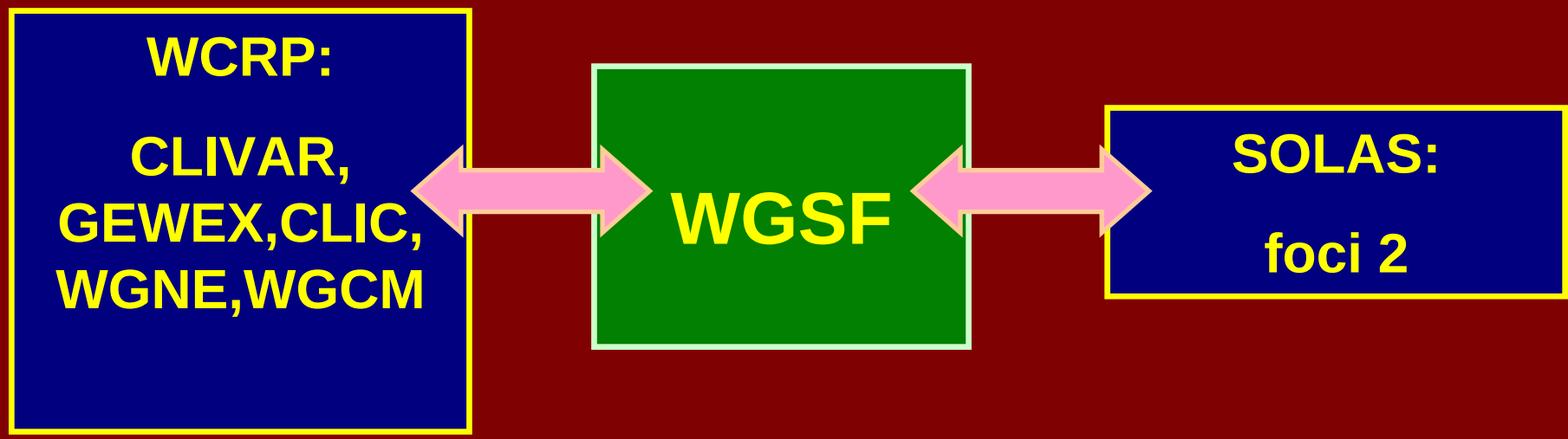
development of the requirements for flux and flux-related observations in co-operation with IGBP, GCOS, GOOS and other relevant activities;

interaction with and support to SOLAS;

Co-operation with SOLAS:

Basic approach:

- Focus on the cross-cutting issues (parameterizations, in-situ observations, sampling and spatial analysis procedures)
- No split – discuss together all issues, including those primarily important for WCRP and SOLAS only
- Try to account for both WCRP and SOLAS issues considering all activities of the WG



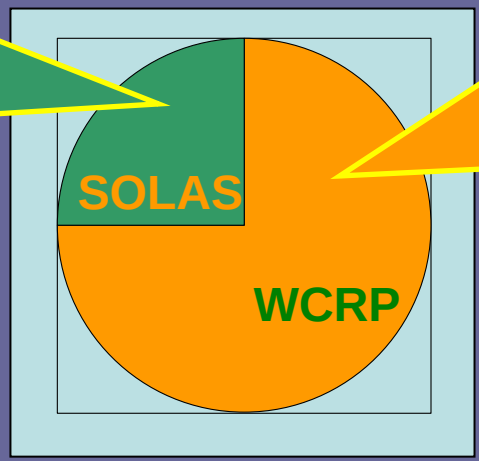
Consideration of fluxes over the land:

In general, within the framework of WGSF future consideration should be given to the fluxes over the land. This may require some modification of TORs and membership in [*tentatively*] 2-3 years. In the initial stage [2-3 years], a close co-operation with the relevant GEWEX panels and WGCM is recommended.

Membership (*to be developed by the chair*):

General approach: WCRP (2/3-3/4) + SOLAS (1/4-1/3)

- biogeochemical fluxes
- particle fluxes
- deposition
- measurement technologies



- NWP fluxes
- data assimilation
- satellite fluxes
- VOS fluxes
- parameterizations
- fluxes for ocean modelling
- wind waves
- fluxes over ice
- surface flux variability
- flux observing systems

Working Group Membership

Draft by C. Fairall, Peter Taylor, David Legler

October 10, 2003

Ex Officio: Peter Taylor

JSC and SOLAS: Sergey Gulev (Shirshov IO), Peter Schlosser (Columbia U), Ken Denman (CCCMA), M. T. Zamanian (IRIMO)

Membership Expertise:
Radiative fluxes, Climate Models, Buoys, VOS/GLOBAL, Fluxes over Ice/Snow, Precipitation, Satellite Fluxes, Data Assimilation, Data Bases, Waves, Turbulent Fluxes, Gas Transfer

Working Group Plans

October 10, 2003

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*Populate the Working Group

*Open communications with WCRP 'constituency'

Interested groups designate liaison

*Start a Website

Handbook on best practices for flux measurements
Selected flux parameterizations (codes)
Selected flux data bases
Links to other flux databases

*Develop strategies/plans to meet our objectives

development of the requirements for flux and flux-related observations in co-operation with IGBP, GCOS, GOOS and other relevant activities;

EXAMPLE: Attended ACSYS/CLIC Meeting Arctic/Antarctic

October 10, 2003

Recent/Ongoing/Future Flux Projects

SHEBA

ARM North Slope Alaska

SEARCH

Greenland

Eureka

OASIS

Immediate Issues

March 1, 2004

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*Assembling the WG

*Meeting with SOLAS

Future joint symposium on flux parameterizations?

*Project SEAFLUX (GEWEX)

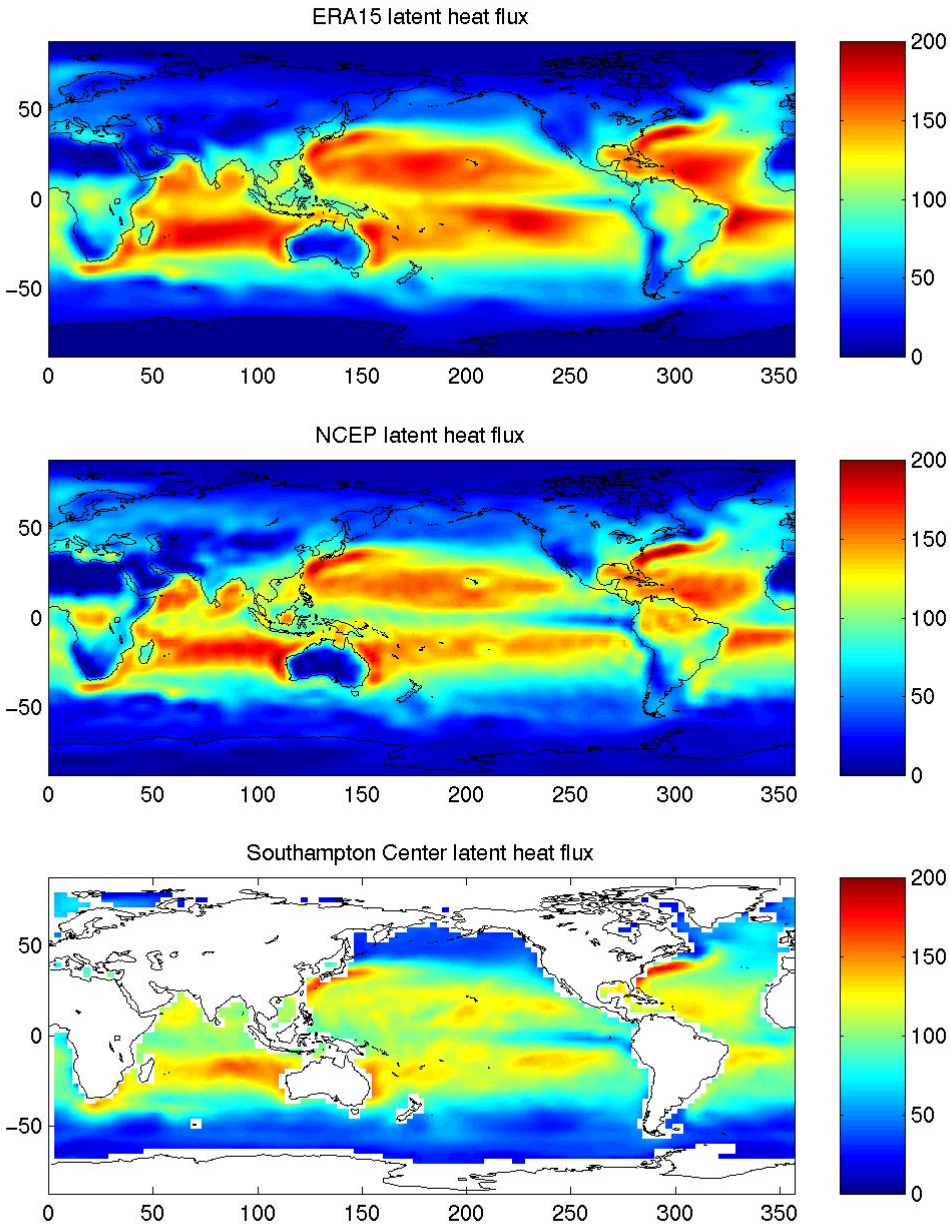
*Handbook on Flux Measurements

Air-sea

Air-Ice/snow

Proposed WG Membership

1	Chair	Christopher, Fairall, NOAA Environmental Technology Laboratory	USA	Chris.fairall@noaa.gov
2	GCM	Anton Beljaars, ECMWF	Holland	Anton.Beljaars@ecmwf.int
3	Buoys	Bob Weller, WHOI	USA	rweller@whoi.edu
4	VOS/GLOBAL	Elizabeth Kent, SOC	UK	eck@soc.soton.ac.uk
5	Ice/Snow	Ed Andreas, CRREL	USA	Edgar.L.Andreas@erdc.usace.army.mil
6	Precipitation	Frank Bradley, CSIRO	Australia	Frank.Bradley@csiro.au
7	Satellite	Abderrahim Bentamy, IFREMER	France	abderrahim.bentamy@ifremer.fr
8	Ocean/Assimilation	Bernard Barnier, LEGI-CNRS	France	bernard.barnier@hmg.inpg.fr
9	Data Base	Shawn Smith, FSU	USA	smith@coaps.fsu.edu
10	Waves	Will Drennan, U Mia	USA	wdrennan@rsmas.miami.edu
11	SOLAS focus 2	Wade McGillis, Colombia U.	USA	wrm2102@columbia.edu


ERA15 latent heat flux
NCEP latent heat flux
Southampton Center latent heat flux
50
0
−50
0
50
100
150
200
250
300
350
200
150
100
50
0