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Fluxes Task Team and SOLAS update

Anna Rutgersson, professor of meteorology
Uppsala Universitet

Member of SOLAS SSC and co-chair of Fluxes Task Team

Flux Task Team

Members and News:

Carol Anne Clayson (chair) WHOI
Brian Ward (co-chair) University of Galway
Anna Rutgersson (co-chair), new
Anton Beljaars, ECMWF
Ronald Buss de Souze, National Institute for Space Research
James Edson, University of Connecticut
Peter Gleckler, LLNL
Petra Heil, University of Tasmania
Carlos Jimenez, Observatoire de Paris
Pierre-Philippe Mathieu, ESRIN
Saigusa Nobuko, National Institute for Environmental Studies
Hans Peter Schmid, Karlsruhe Institute of Technology
Paul Stackhouse, NASA Langley

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Flux Task Team, defined terms of reference

1. Point-of-contact for surface flux observations and analysis in the WCRP.

2. Establish and encourage the publication and use of data, metadata, and documentation standards for global surface flux (ocean, land, or ice and atmosphere) data sets that are consistent with standards and infrastructure used in major climate model intercomparison efforts.

3. Establish conventions for intercomparisons of global datasets, and for assessment of the global datasets with available in situ data, making use of established assessments for other components of the Earth system from GEWEX and other WCRP entities.

4. Report to the WDAC and WCRP Core Projects (e.g., GEWEX/GDAP and CLIVAR) on progress, status, and plans for activities overseen by the Task Team.

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Flux Task Team

Present main activities:

Monthly telecons for communication, discussions and updates.

Webpage (under development, soon to be public).

White Paper (in progress):
Outlining the need for a coordinated high-level approach to improving our understanding of surface-atmosphere fluxes

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White paper, topics:

Radiative and turbulent fluxes:
Air-sea fluxes.
Land-air fluxes.
Ice-air/ocean fluxes.

Measurement/modeling techniques and uncertainties
In situ measurements
Satellite-derived measurements
NWP analyses and re-analyses

Task Team Structure and Mission, Links to the larger community

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Flux Task Team

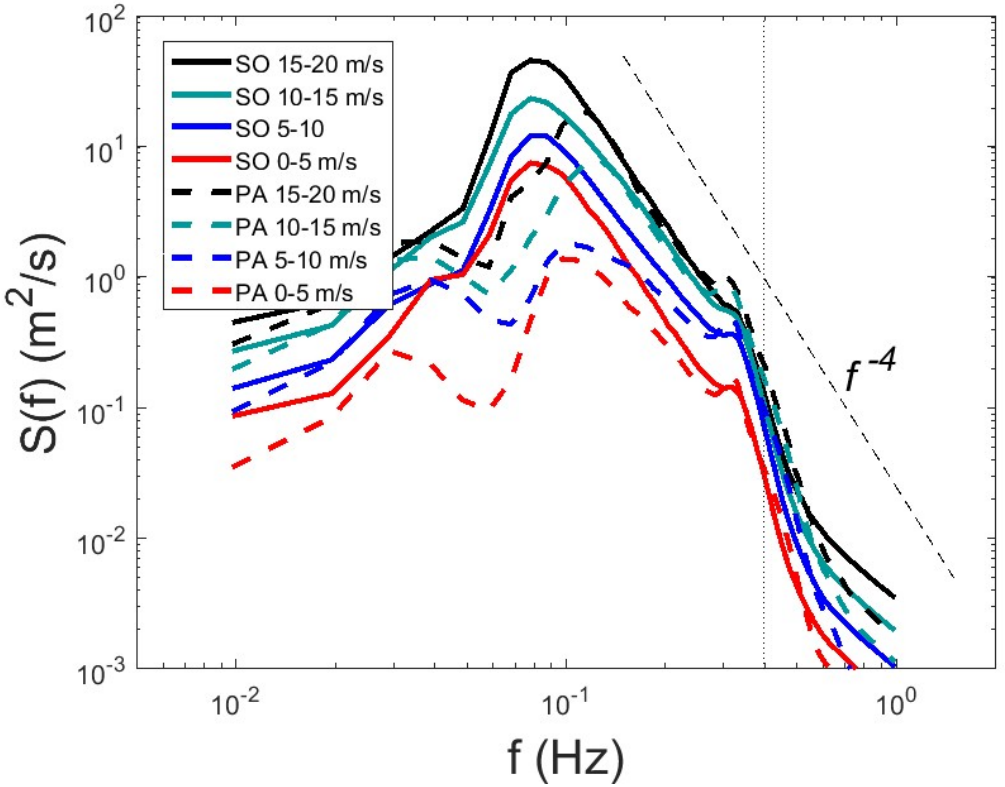
Ocean Observatories Initiative (OOI) program:
Monitoring areas otherwise being ”white regions”, have been successful, and very important for science.

Funded by US NSF

Presently very unclear funding situation and non-transparent process.

An example of vital Southern Ocean OOI data

- Data is shown from the mid-Atlantic bight (Pioneer Array) and Southern Ocean OOI buoy.
- Significant differences in wave spectra
  - Peaks have higher amplitude and lower frequency at SO for the same wind speed
  - Presumably this is due to effectively infinite fetch in SO
  - Amplitude of waves are similar for frequencies above the spectral peak
- *To investigate the impact of long waves on the surface fluxes*



One-dimensional wave spectra
Courtesy J. Edson, WHOI.

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Flux Task Team

Ocean Observatories Initiative (OOI) program:
Monitoring areas otherwise being ”white regions”, have been successful, and very important for science.

Can WDAC/WCRP make a statement on the importance of continued running of this initiative?

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Flux Task Team, questions

Obs4Mips and in-situ data?

OOI-statement?

Srategy: Interactions, coastal zone, high variability…

SOLAS (Surface Ocean - Lower Atmosphere Study)

SSC:

Lisa Miller (Canada), SOLAS SSC Chair
Katye Altieri (South Africa) ***(NEW)***
Arne Körtzier (Germany) ***(NEW)***
Philip Boyd (Australia)
Mohd Talib Latif (Malaysia) ***(NEW)***
Erik van Doorn (Germany)
Maurice Levasseur (Canada)
Cristina Facchini (Italy)
Peter Minnett (USA)
Laura Gallardo (Chile) ***(NEW)***
Jun Nishioka (Japan)
Véronique Garçon (France) ***(ex officio)***
Anna Rutgersson (Sweden)
Santiago Gassó (USA) ***(NEW)***
Alfonso Saiz-Lopez (Spain)
Ilan Koren (Israel)
Parvadha Suntharalingam (UK)
Guiling Zhag (China)

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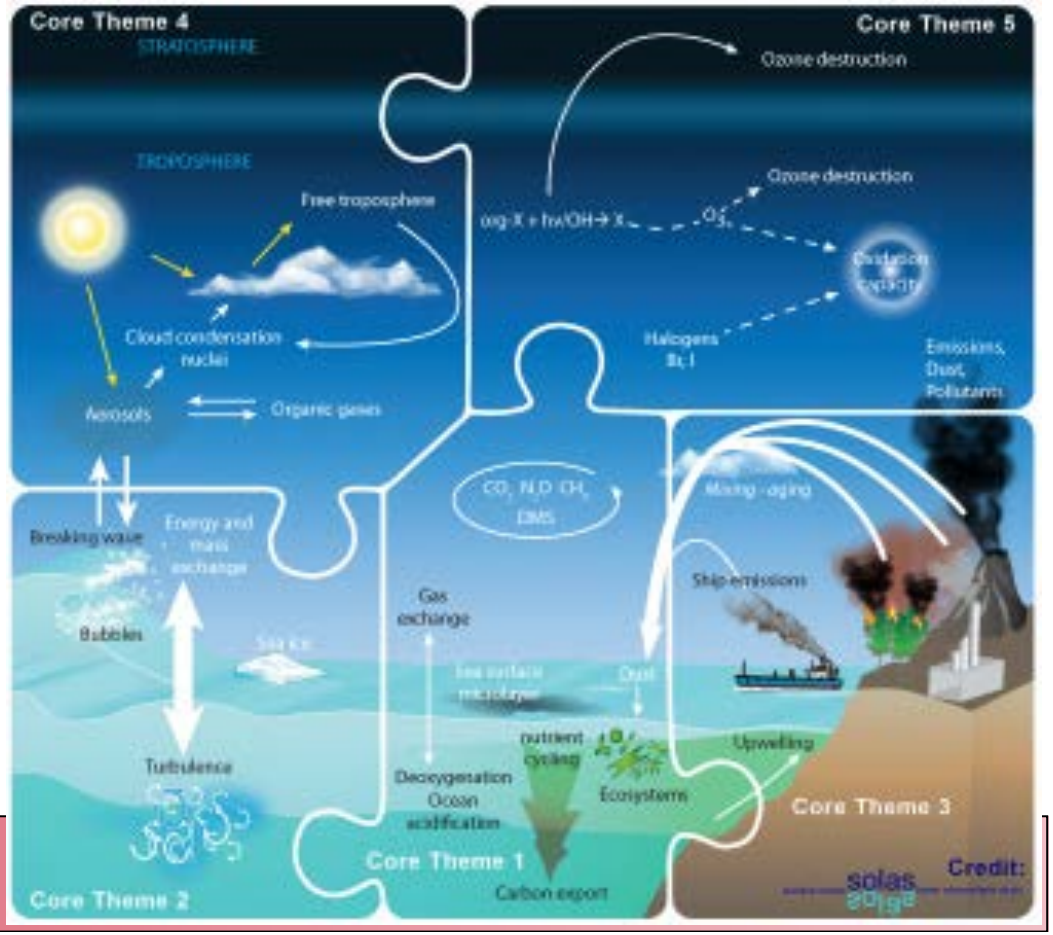
SOLAS science plan (2015-2025)

Theme 1: Greenhouse gases and the oceans
Theme 2: Air-sea interface and fluxes of mass and energy
Theme 3: Atmospheric deposition and ocean biogeochemistry
Theme 4: Interconnections between aerosols, clouds, and marine ecosystems
Theme 5: Ocean biogeochemical control on atmospheric chemistry.

Science and society:
Shipplumes



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SOLAS activities

Development of scientific plan (webpage)
Annual SSC meetings
Summer school 2018
Scientific conferences (next 2019)
Workshops:
- remote sensing and surface fluxes
- shipplumes
- …