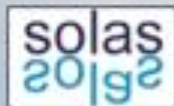




A Collection of Underway Ocean CO₂
Observations Quality Controlled
by the Science Community



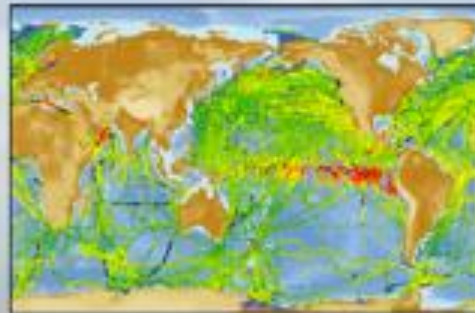
Welcome to the SOCAT Data Access System



SOCAT Data Products:

[Cruise Data Viewer](#)[Gridded Data Viewer](#)[Table of Cruises](#)[Data Access](#)[Publications](#)[SOCAT Credits](#)

Version 1.5



SOCAT Documentation:

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SOCAT history & products

Starting point (SOCOVV meeting, April 2007 at Unesco):

- Surface water xCO₂, pCO₂ & fCO₂ data in various formats. Stored at different locations. Many historic data not public. No global fCO₂ data set publicly available.

Two SOCAT data products:

- 1) Global surface ocean data set of recalculated fCO₂ in a uniform format with 2nd level quality control;
 - 2) Global gridded product of monthly surface water fCO₂ means, with no temporal or spatial interpolation (i.e. bin averages).
- These data products will be made publicly available.
 - The methods in SOCAT are transparent and fully documented.
 - Technical articles documenting the SOCAT methods.

SOCAT scientists 2007-2011



SOCAT regional group leaders,
QC-ers, early testers, meeting
participants, data contributors;

Meetings in Paris, Delmenhorst,
Bremen, Kiel, Tsukuba, Norwich,
Hobart, .. & by Skype.

SOCAT groups

- Global (*Bakker, Sabine, Olsen, Pfeil, Metzl, Hankin, Kozyr, Telszewski*)
 - Coastal waters (*Borges, Chen*)
 - North Atlantic & Arctic: north of 30°N (*Schuster*)
 - Tropical Atlantic: 30°N to 30°S (*Lefèvre*)
 - Indian Ocean: north of 30°S (*VVSS Sarma*)
 - North Pacific: north of 30°N (*Nojiri*)
 - Tropical Pacific: 30°N to 30°S (*Feely*)
 - Southern Ocean: south of 30°S, incl. coastal regions (*Tilbrook, Metzl*)
-
- Website <http://www.socat.info/> (*Pfeil*);
 - Live Access Server (LAS) for QC & gridding (*Malczyk, Koyuk, Hankin*);
 - QC cook book (*Olsen, Metzl*);
 - Matlab QC code (*Olsen, Pierrot*);
 - SOCAT logo (*Brown*).

SOCAT Data Products v1.5

Data Viewers
(interactive)

Global fCO₂ data &
gridded fCO₂ data &
cruise data files

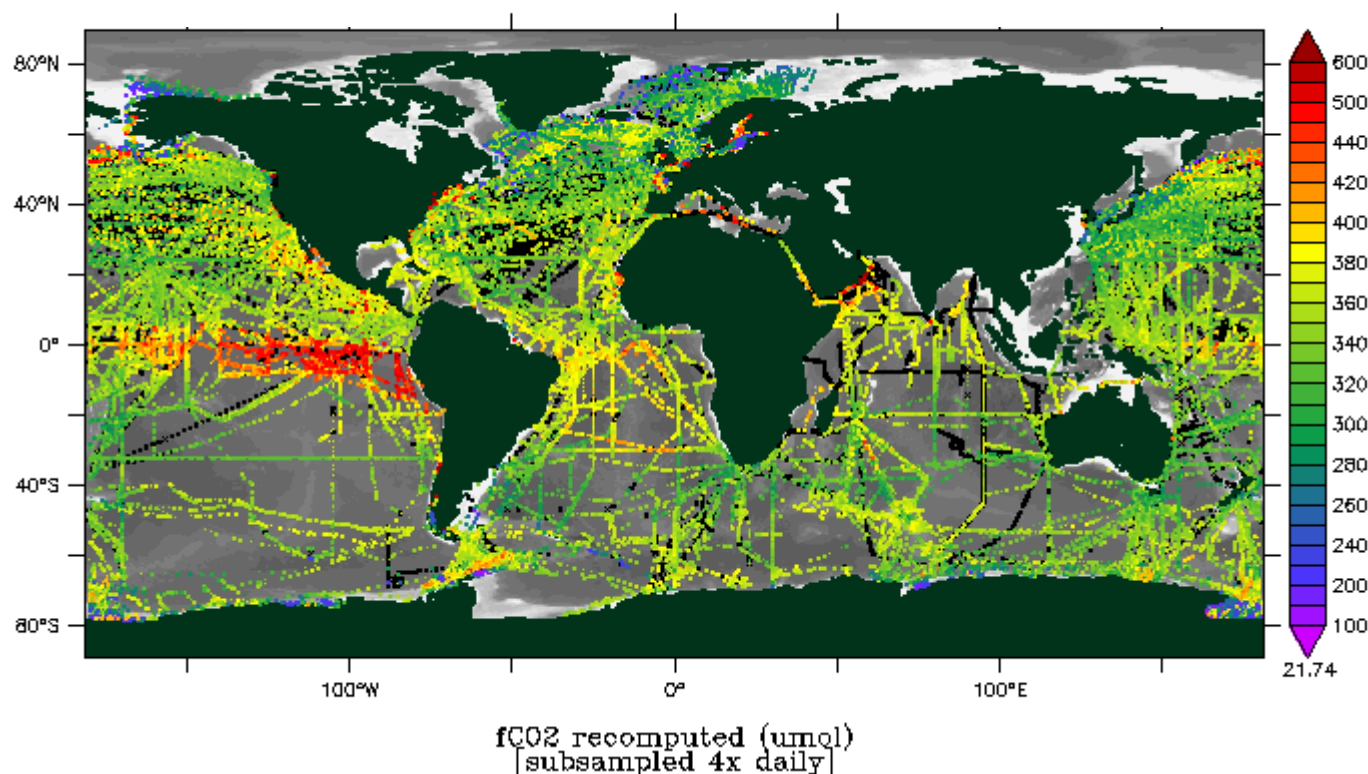


<http://www.socat.info>

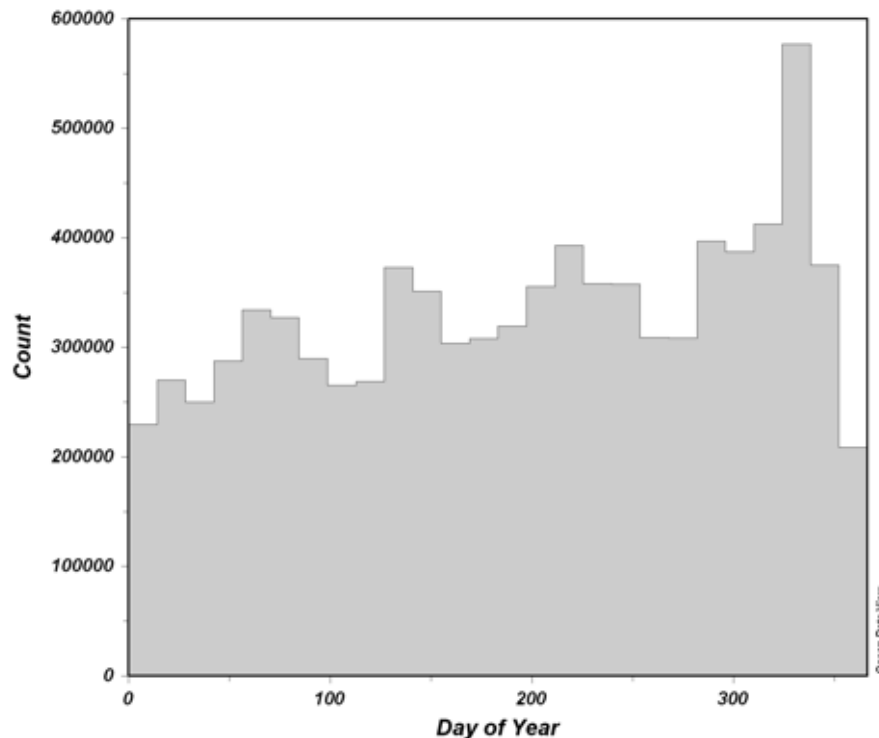
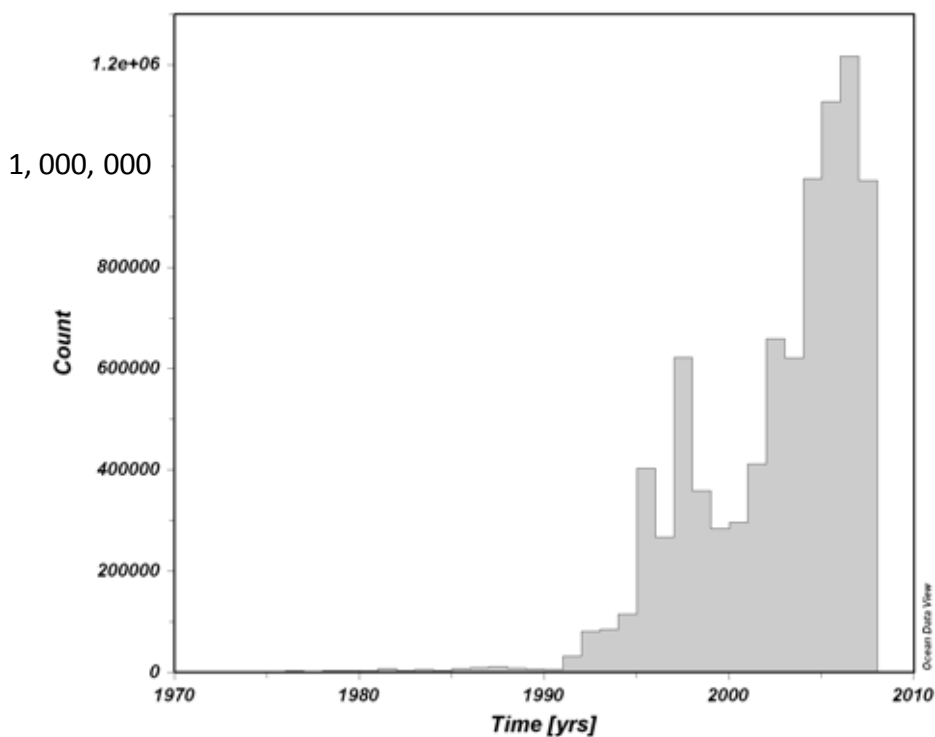
- Files can be downloaded from PANGAEA and CDIAC.
- Products are citable through Digital Object Identifiers (DOIs).
- On-line viewers (based on PMEL's Live Access Server) include analysis capabilities.

Global fCO₂ data with 2nd level quality control

6.3 million fCO₂ data on 1851 cruises from 1968 to 2007



fCO₂ data version 1.5



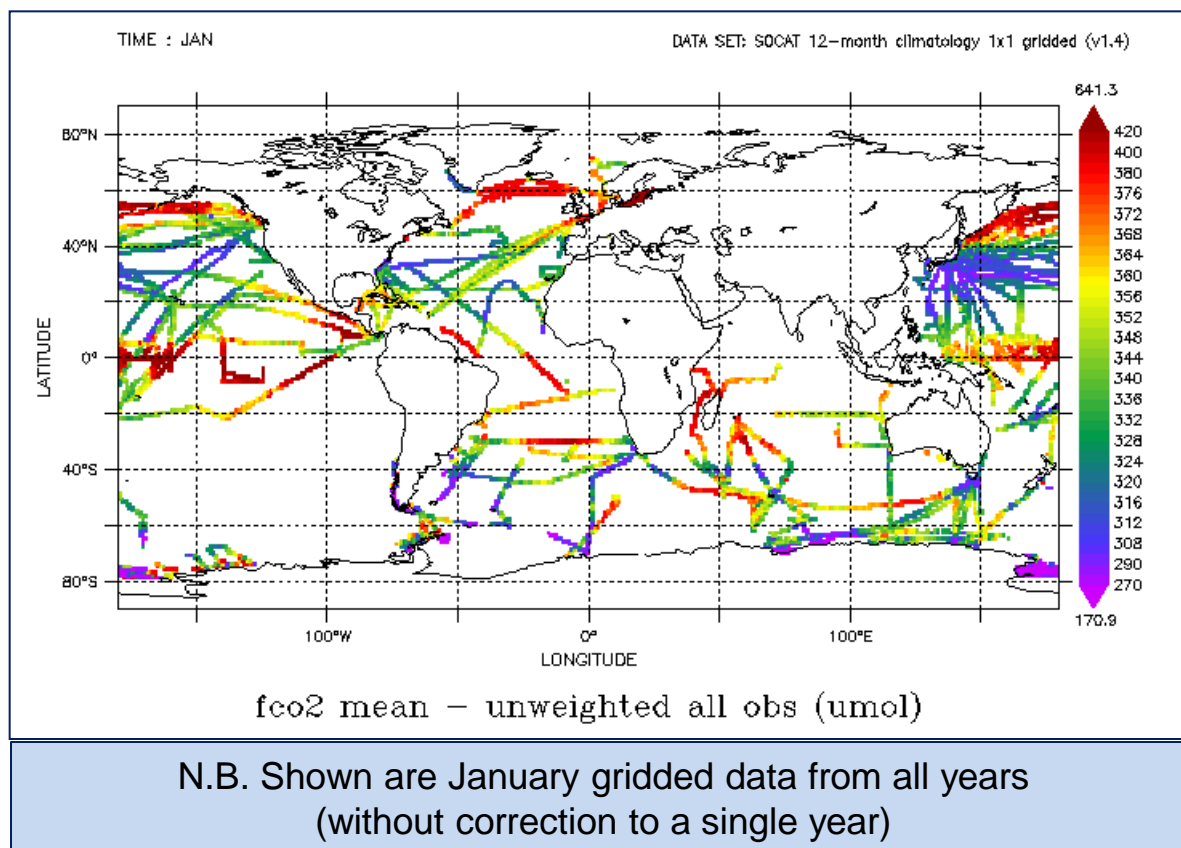
Changes have been made since version 1.3 (internal release)!

- Multiple data per minute have been averaged.
- A few cruises and data points have been deleted.
- Correction of some Expocodes

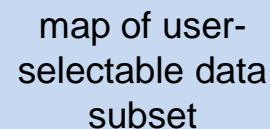
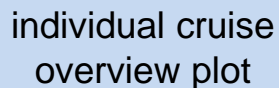
Graphs by Reiner Schlitzer, ODV v4.4.1

Global gridded fCO₂

Monthly fCO₂ means, no temporal or spatial interpolation.
Open ocean 1° x 1° & coastal waters 1/4° x 1/4°.

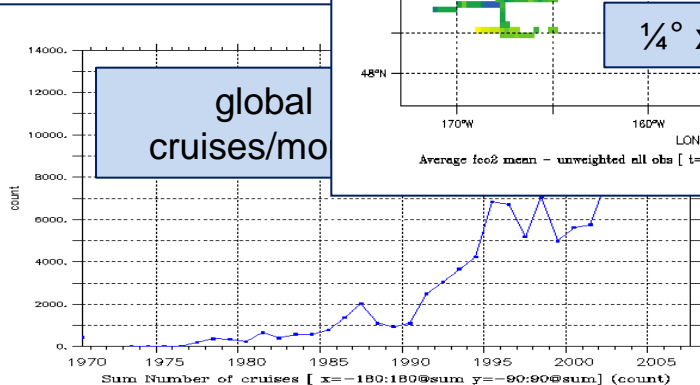
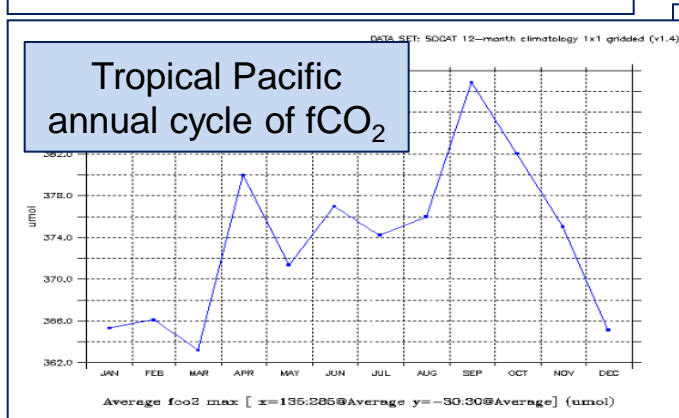
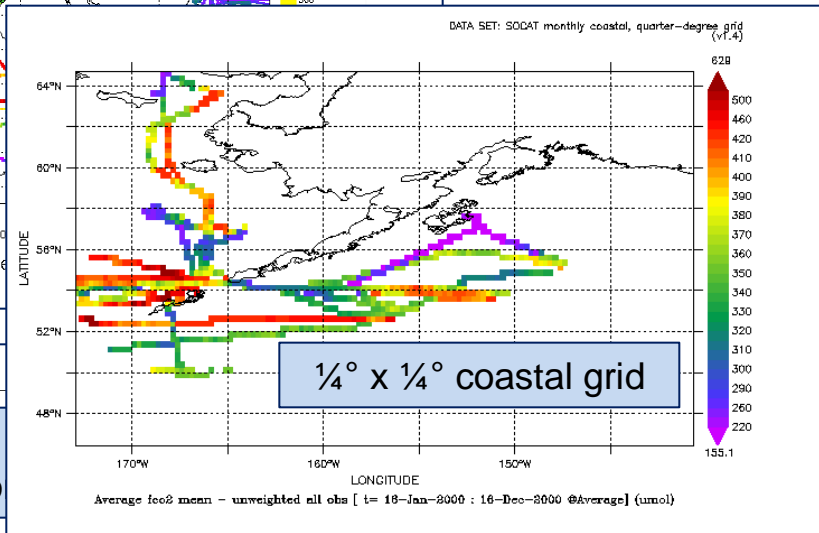
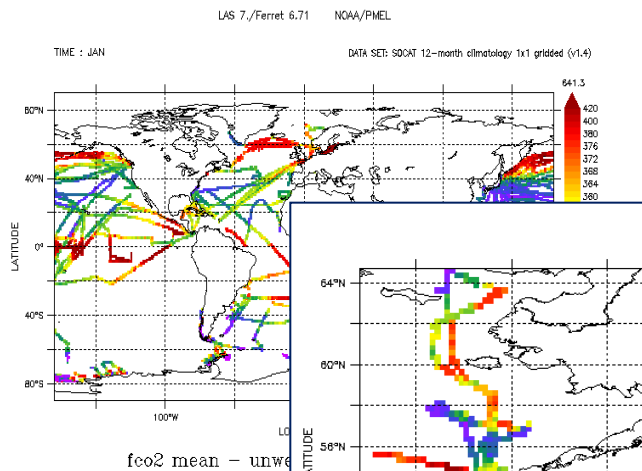
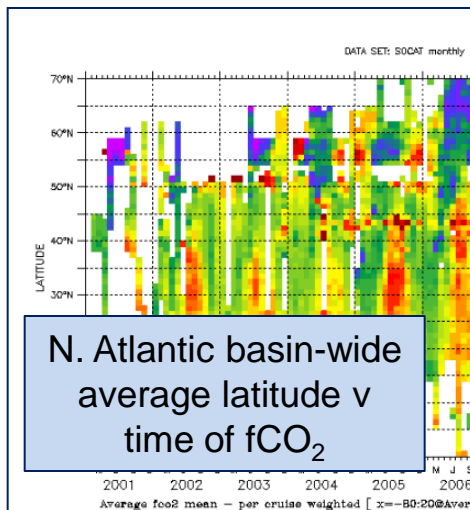
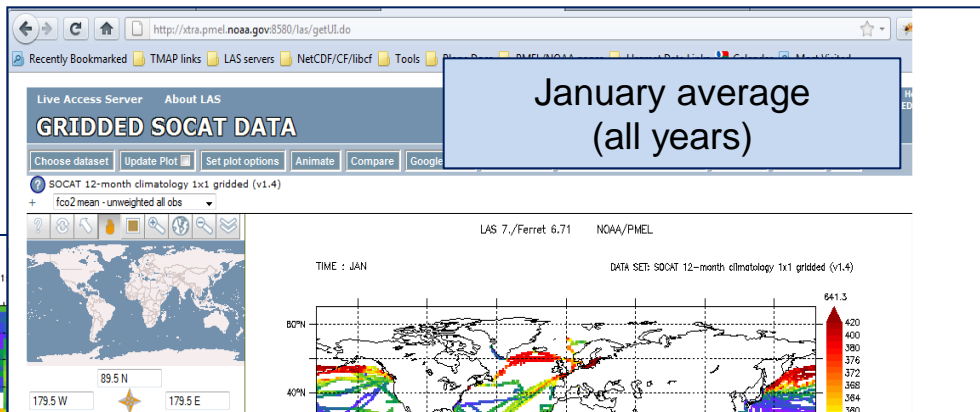


See poster by Steve Hankin et al.



See poster by Steve Hankin et al.

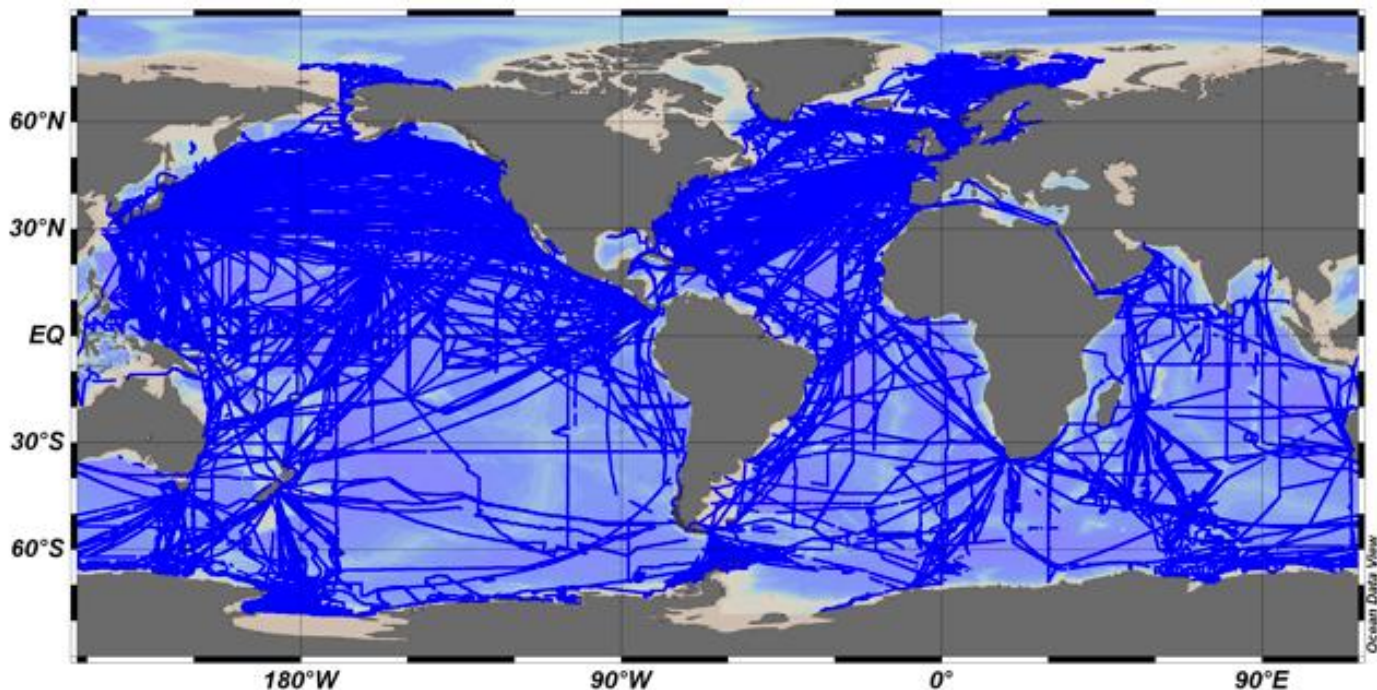
Gridded Data Viewer



See poster by
Steve Hankin et
al.

ODV ready for SOCAT

Ocean Data View (ODV) release version 4.4.1 (28 July 2011) at <http://odv.awi.de/> is suitable for large files (>2 Gb). The selection of stations and updating of the map has been improved by a factor 50.



(graph by Reiner Schlitzer)

Publications

How to cite SOCAT:

Pfeil, B., A. Olsen, D.C.E. Bakker, et al. (2011) A uniform, quality controlled, Surface Ocean CO₂ Atlas (SOCAT). Earth System Science Data (in preparation).

Sabine et al. (2011) Gridding of the Surface Ocean CO₂ Atlas (SOCAT). Earth System Science Data (in preparation).

SOCAT highlight:

Bakker, D.C.E., Pfeil, B., Olsen, A., Metzl, N., Sabine, C., Hankin, S., Koyuk, H., Malczyk, J., Kozyr, A., Telszewski, M. (2011) The Surface Ocean CO₂ Atlas: a new tool for assessing changes in the ocean carbon sink. EOS (ready for submission).

Scientific articles – The more the better!

- At least 1 high flying paper;
- Special Issue (this meeting)
- Some papers in time for IPCC AR5.

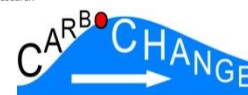
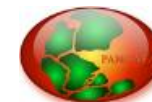
Future SOCAT

- Needs and priorities for future SOCAT, e.g.
 - Regular releases;
 - Additional parameters?
 - Streamline SOCAT, e.g.
 - Automation of submission of (meta-)data;
 - Automation of QC;
 - Lessons from version 1.5.
 - Develop SOCAT data policy;
 - Funding needs & opportunities
-
- Submit data for future SOCAT (submit@socat.info) !!!!!!!
 - Cite SOCAT in publications.
 - Check <http://www.socat.info/> for updates.
 - Synthesis session at the 2012 Ocean Sciences meeting.

Credits

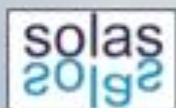
Benjamin Pfeil, Are Olsen, Jeremy Malczyk, Heather Koyuk, Steven Hankin, Ansley Manke, Alex Kozyr, Reiner Sieger, Dorothee Bakker, Pete Brown, Chris Sabine, Denis Pierrot, Nicolas Metzl, Maria Hood, Kathy Tedesco, Maciej Telszewski, All SOCAT regional group leaders, QC-ers, early testers, meeting participants, data contributors;

Funded by: University of Bergen, University of Washington, National Oceanographic and Atmospheric Administration, Oak Ridge National Laboratory, University of East Anglia, LOCEAN-IPSL, Université Pierre et Marie Curie, EU CarboOcean, CarboChange, Surface Ocean Lower Atmosphere Study, Integrated Marine Biogeochemistry and Ecosystem Research, U.S. National Science Foundation, SCOR, IfM-Geomar, National Institute for Environmental Studies (Japan), the Commonwealth Scientific and Industrial Research Organisation, EU COST-735, SFB754, ...;





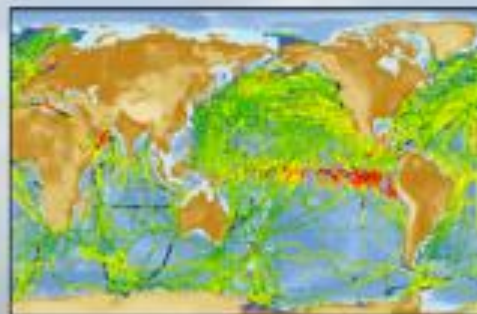
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