

2024 OCEAN DECADE CONFERENCE

DELIVERING THE SCIENCE WE
NEED FOR THE OCEAN WE
WANT 10-12 APRIL 2024
BARCELONA, SPAIN

As part of the Ocean Decade Week (8-12 April 2024)

Unifying Strategies to Develop Integrated Global Air-Sea Community Networks

*An Official UN Ocean Decade
Conference Side Event*



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development

*"Always the edge of the sea remains
an elusive and indefinable boundary."*

~ Rachel Carson



Panelists

Moderated by:



Joan Llort
 SOLAS SSC
 Member/ECSC Chair,
 Barcelona
 Supercomputing
 Center, Spain



Nick Rome
 Senior Program
 Manager, UCAR Center
 for Ocean Leadership,
 OASIS, WG7



Dr. Li Li
 SOLAS Executive
 Director, State Key
 Laboratory of Marine
 Environmental Science,
 China



**Dr. Lucía Gutiérrez
 Loza**
 Postdoctoral researcher,
 NORCE Norwegian
 Research Centre, OASIS

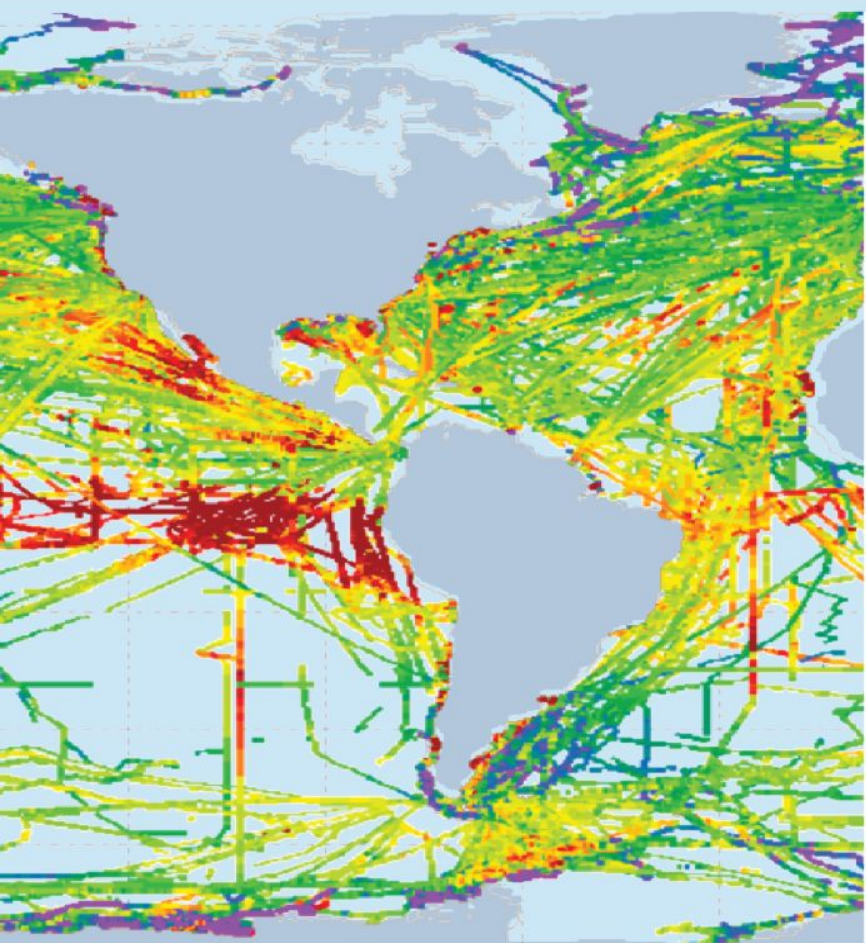


Dr. Shuangling Chen
 Professor, Second Institute
 of Oceanography, MNR,
 China, OASIS

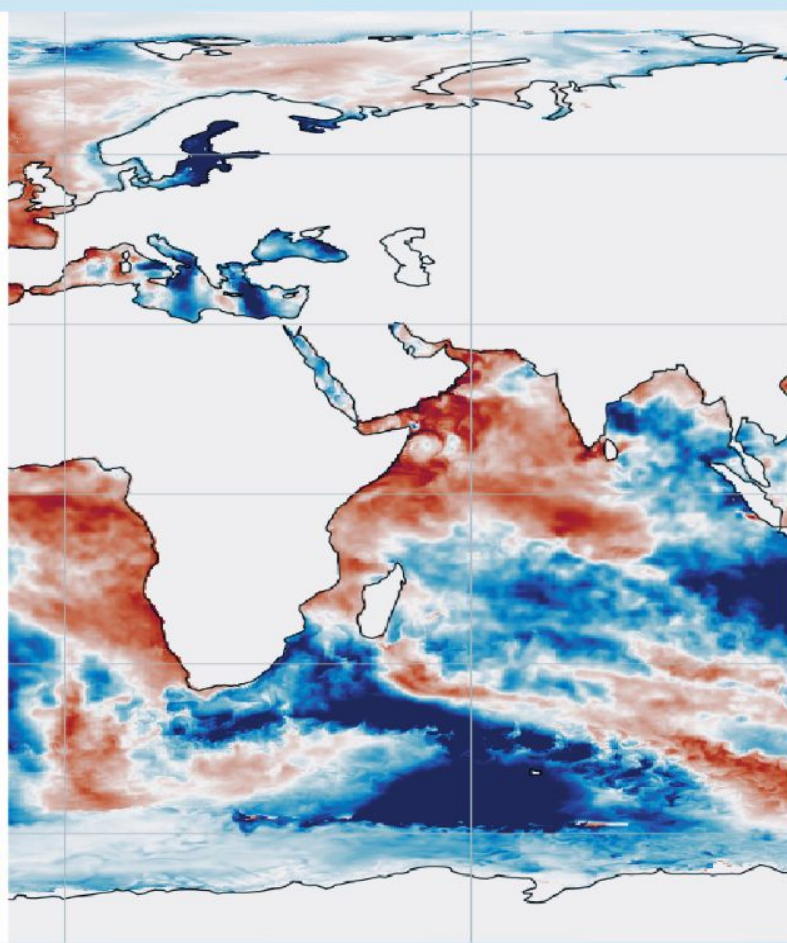


Dr. Martí Galí
 Senior Researcher,
 DMS-PRO Co-Chair,
 Institut de Ciències del
 Mar, Spain

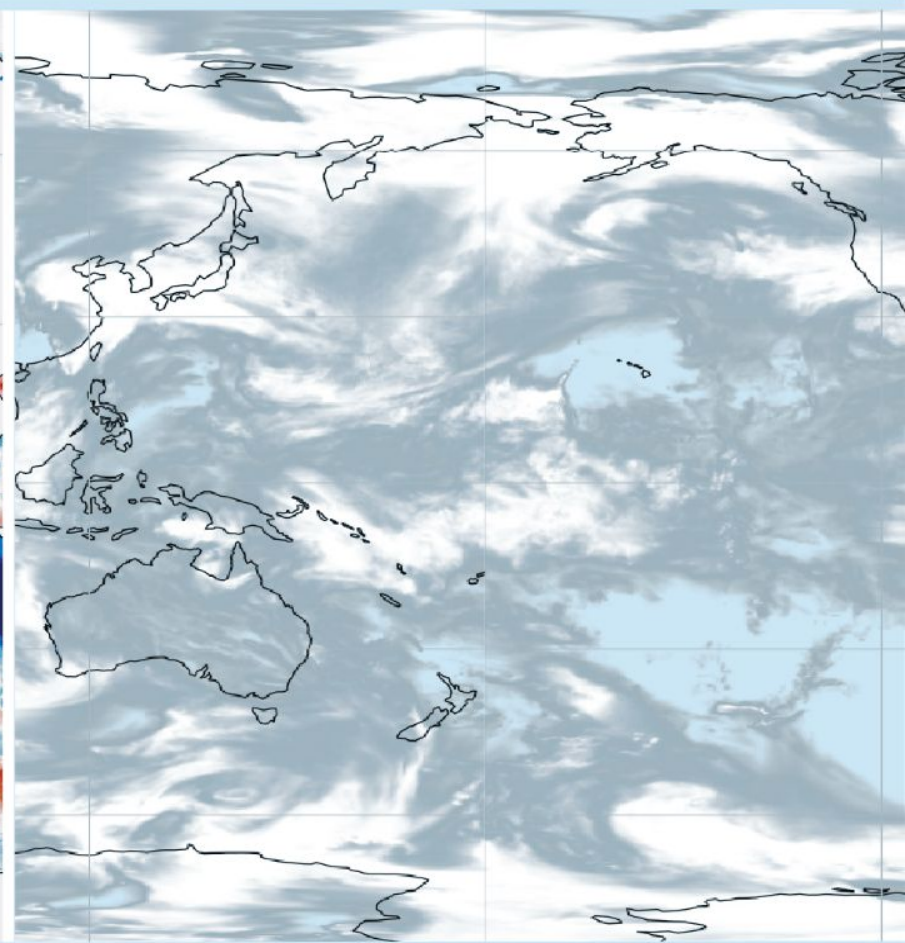




**Expanded network of in situ
Observations**



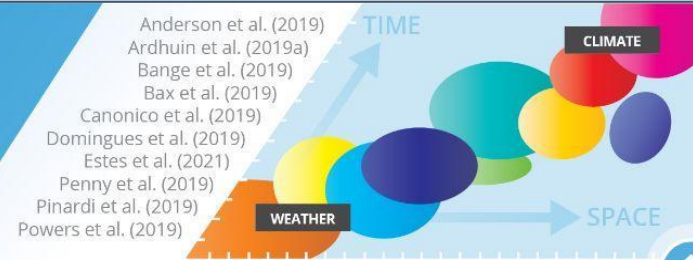
**Observations from Optimized
Satellites**



**Improved Information from
Earth-System Models**



Observing Air-Sea Interactions Strategy (OASIS) is harmonizing community recommendations from OceanObs'19 and UN Decade Laboratories... ...into three Grand Ideas



Improved Earth system (including ecosystem) forecasts for a predicted, clean, accessible, healthy, safe & productive ocean

Arico et al. (2021)
Bax et al. (2018)
Benson et al. (2018)
Cronin et al. (2019)
Cronin et al. (2021)
Fennel et al. (2018)
Foltz et al. (2019)
Hermes et al. (2019)
Maximenko et al. (2019)
Smith et al. (2019)
Speich et al. (2019)
Wanninkhof et al. (2019)

Improved ocean information serving stakeholders around the world

Centurioni et al. (2019)
Groom et al. (2019)
Harcourt et al. (2019)
Jamet et al. (2019)
Muelbert et al. (2019)
Muller-Karger et al. (2018)
Newman et al. (2019)
Lombard et al. (2019)
Marandino et al. (2022)
Kent et al. (2019)
O'Carroll et al. (2019)
Sequeira et al. (2021)
Steinhoff et al. (2019)
Subramanian et al. (2019)
Swart et al. (2019)
Villas Bôas et al. (2019)

Grand Idea #3 Improved models & understanding of air-sea interaction processes

Ardhuin et al. (2019b)
Bourassa et al. (2019)
Gentemann et al. (2020)
Gommenginger et al. (2019)
Morrow et al. (2019)
Rodríguez et al. (2019)
Shutler et al. (2020)
Vinogradova et al. (2019)

Grand Idea #2 Satellites optimized for air-sea fluxes

Meinig et al. (2019)
Pearlman et al. (2019)
Sabine et al. (2020)
SCOR Working Group 154 (2020)
Smith et al. (2019)
Wang et al. (2019)

Grand Idea #1 A globally distributed in situ air-sea observing network built around an expanded array of time series stations

Strengthening Networks for Air Sea Obs

Nick Rome



Improve Governance



Recruit Leadership



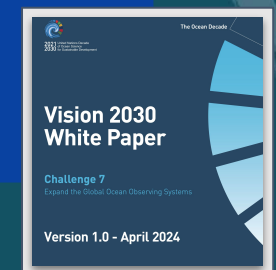
Engage Partners

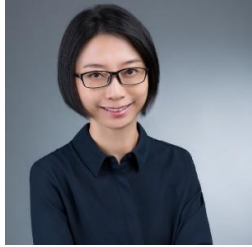
OASIS Scientific Steering Committee

Theory of Change	In Situ Obs	Satellites	Models	Co-Chairs
<ul style="list-style-type: none"> • 2-4 Leads • ECOP 	<ul style="list-style-type: none"> • 2 Leads • ECOP 	<ul style="list-style-type: none"> • 2 Leads • ECOP 	<ul style="list-style-type: none"> • 2 Leads • ECOP 	<ul style="list-style-type: none"> • 3 Leads

Support Staff

1. Identify Key Partners*
2. Utilize Multi-Channel Communication*
3. Engage Advocates and Champions*
4. Mobilize Grassroots Support
5. Leverage Data and Evidence
6. Build Strategic Partnerships
7. Engage in Direct Advocacy





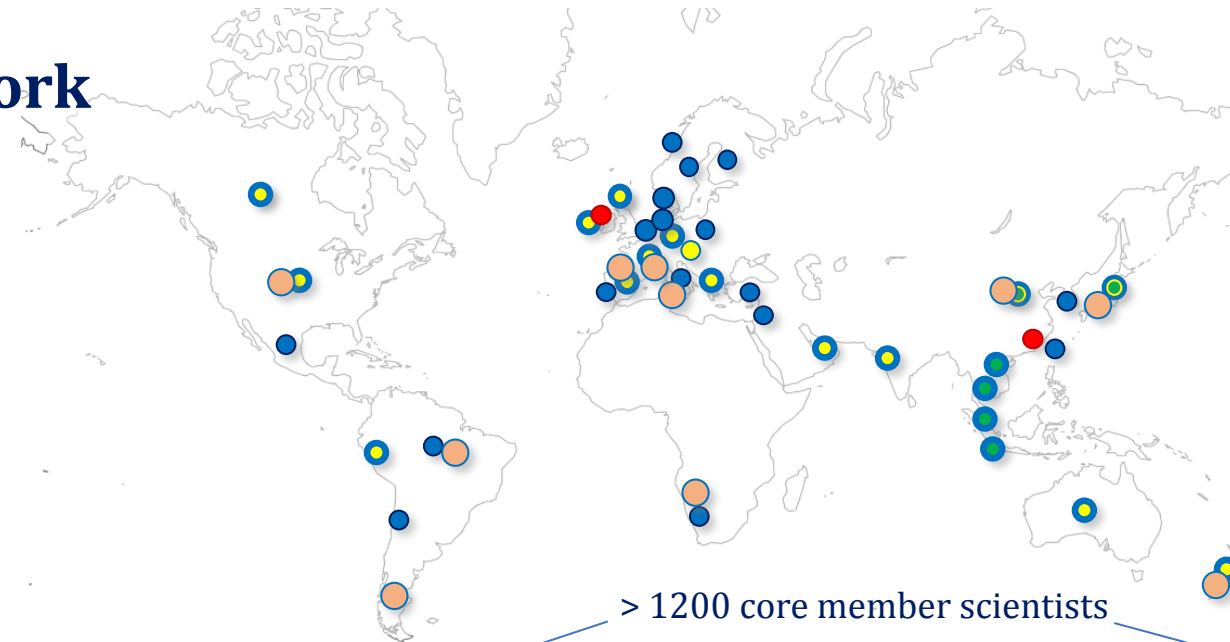
Li Li

SOLAS Executive Director
State Key Laboratory of Marine Environmental Science, China

Surface Ocean – Lower Atmosphere Study (SOLAS)

International research programme officially launched in 2004 to understand the key biogeochemical-physical interactions and feedbacks between ocean and atmosphere and impact on climate regulation and global change

Global Network



- 2 International Project Offices
- 19 Scientific Steering Committee members from 16 countries
- 14 Early Career Scientist Committee members from 10 countries
- 33 National/Regional Networks
- Southeast Asia Regional Panel

> 1200 core member scientists

TRAINING
9 Summer Schools with ~ 600 early career researchers

NETWORKING
8 Open Science Conferences ~1700 participants

KNOWLEDGE EXCHANGE
>100 sponsored workshops

PROJECTS
> 40 sponsored/endorsed projects globally

OUTPUTS
> 200 publications and policy advisories annually

COMMUNICATION
>100 e-bulleting, newsletters, and reports





Surface Ocean – Lower Atmosphere Study (SOLAS)

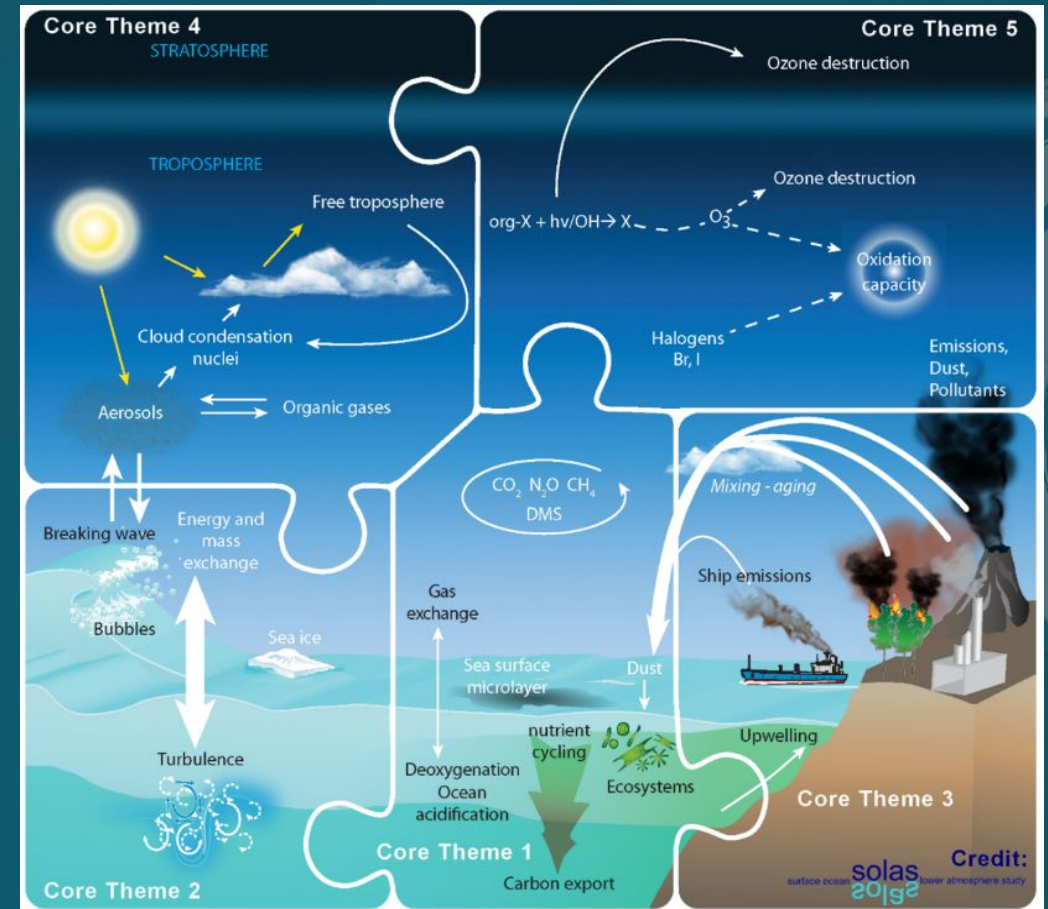
Science Plan 2015-2025

Core Themes

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

Cross-Cutting Themes

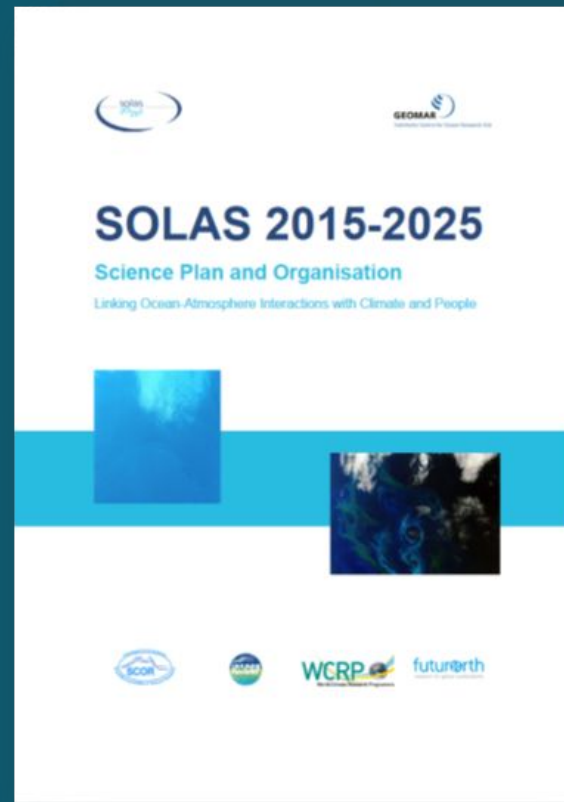
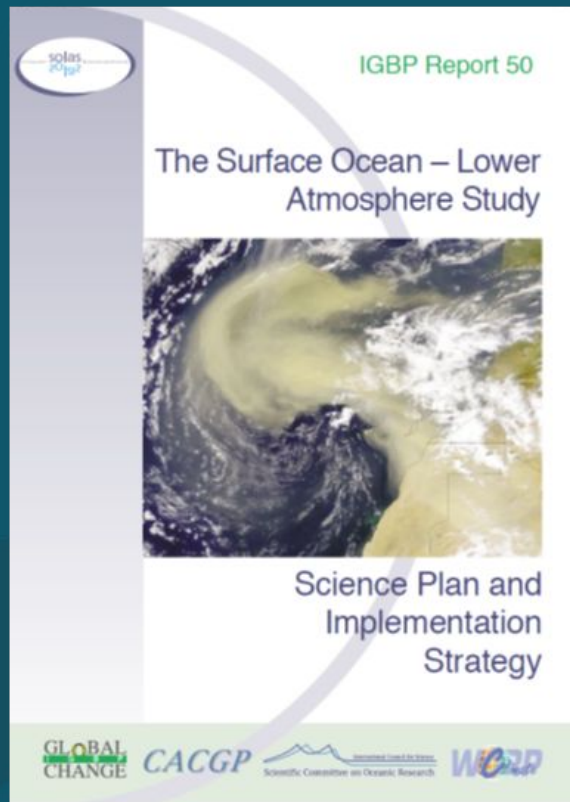
- Regional studies - upwelling systems, polar oceans, Indian Ocean
- Climate intervention: environmental efficacy and impacts
- Science & Society: ship emissions, blue carbon





Surface Ocean – Lower Atmosphere Study (SOLAS)

Future beyond 2025



Lucía Gutiérrez-Loza



Post-doc at NORCE Norwegian Research Centre, Bjerknes Centre for Climate Research

ECOP and co-lead of the recommended practices theme team in OASIS

Research interests air-sea gas exchange from eddy covariance, marine biogeochemistry with focus on the polar regions

*Building integrated and sustained air-sea interaction observation networks from a **community of practice***

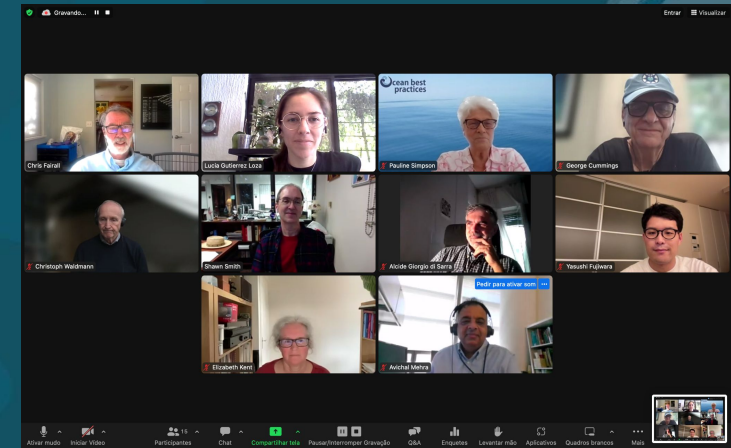


2021 United Nations Decade of Ocean Science for Sustainable Development 2030

Contact: lulo@norceresearch.no
<https://airseaobs.org/>



OASIS F2F meeting, Feb. 2024



OBPS Workshop: air-sea interaction session, Oct. 2023



Martí Galí



Researcher, ICM-CSIC, Barcelona
Co-chair, DMS-PRO

Research interests: plankton-climate interactions through C and S cycles

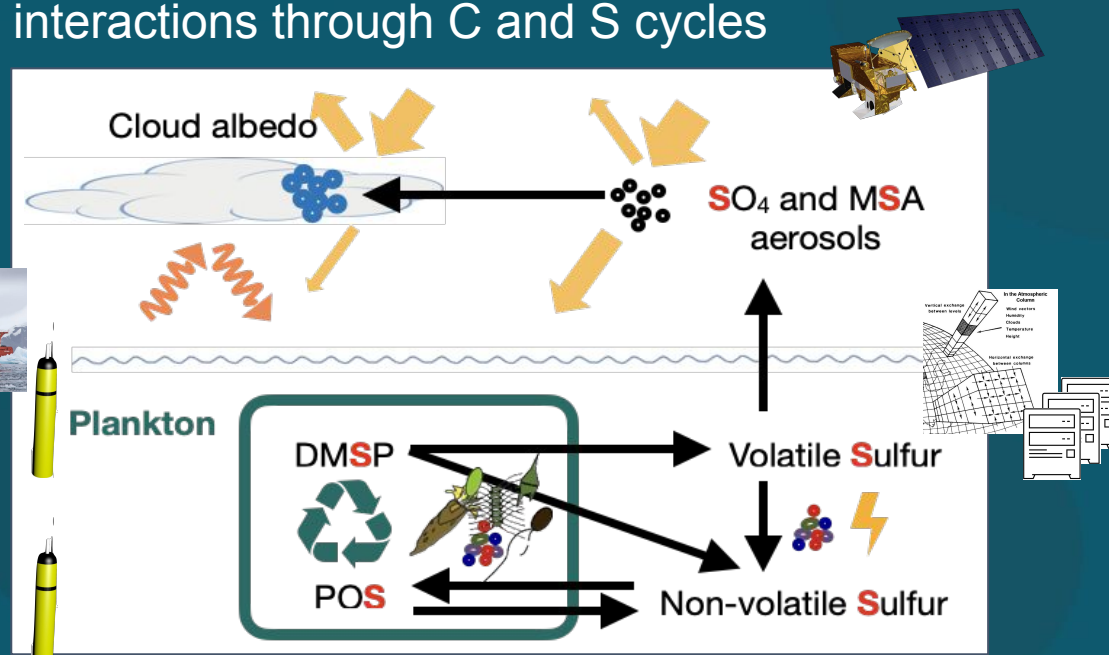
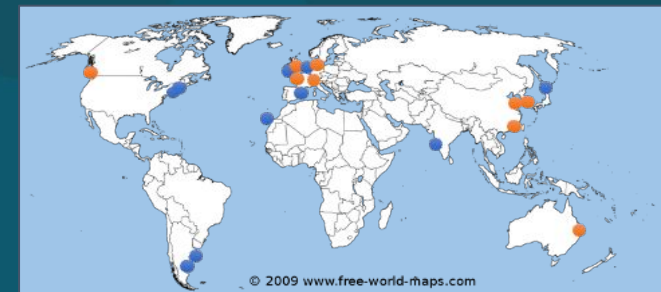


Powering the study of Methylated Sulfur compound cycling PROCesses

- Public database (FAIR)
- Standard Operating Procedures
- Synthesis papers



Capacity building: towards a global community of practice



Shuangling Chen

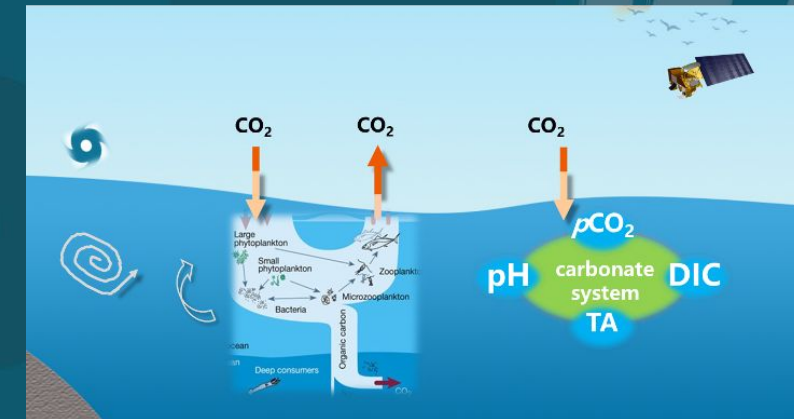
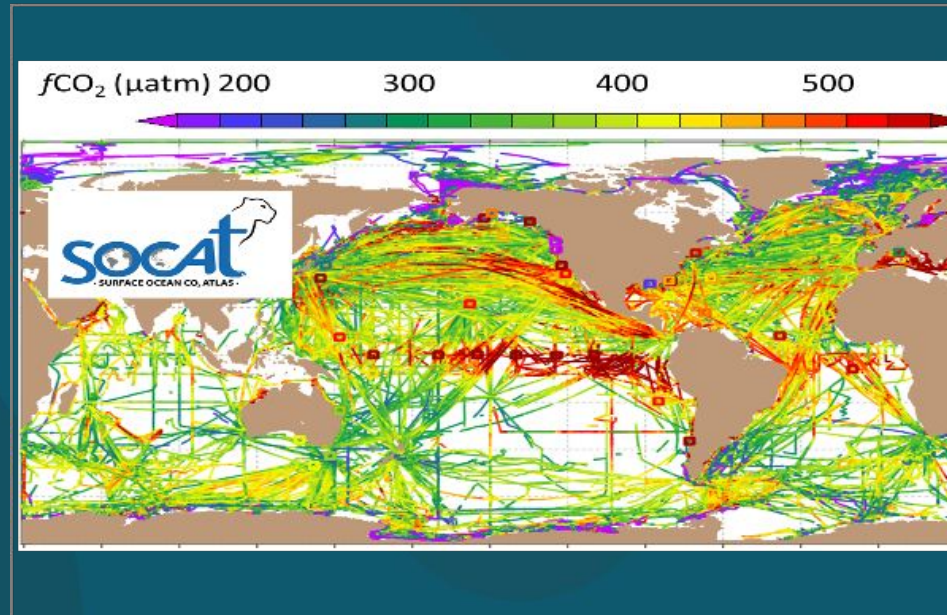
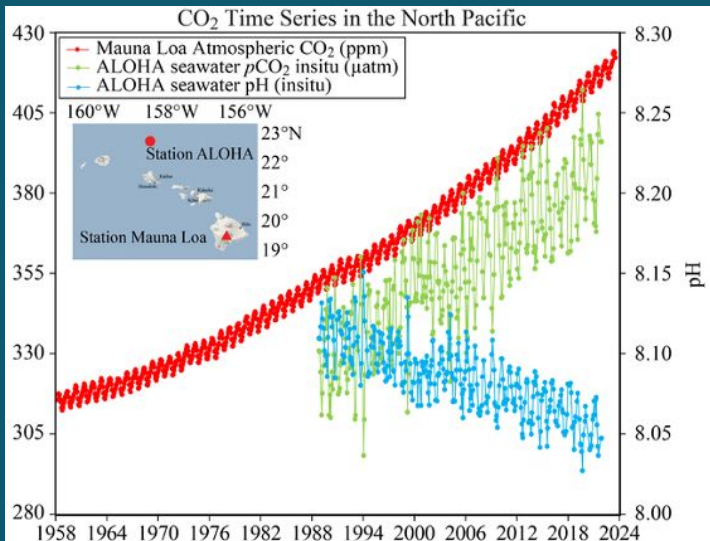
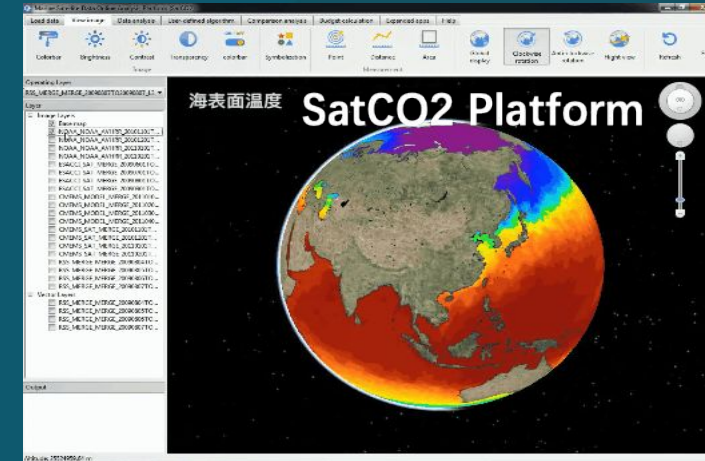
Professor, Second Institute of Oceanography, MNR, China
Member, UN Ocean Decade Programme-OASIS

Research Interest: Ocean color remote sensing, air-sea CO₂ fluxes

Delivering the science we need for the ocean we want



Interest for collaboration? Please contact: slchen@sio.org.cn



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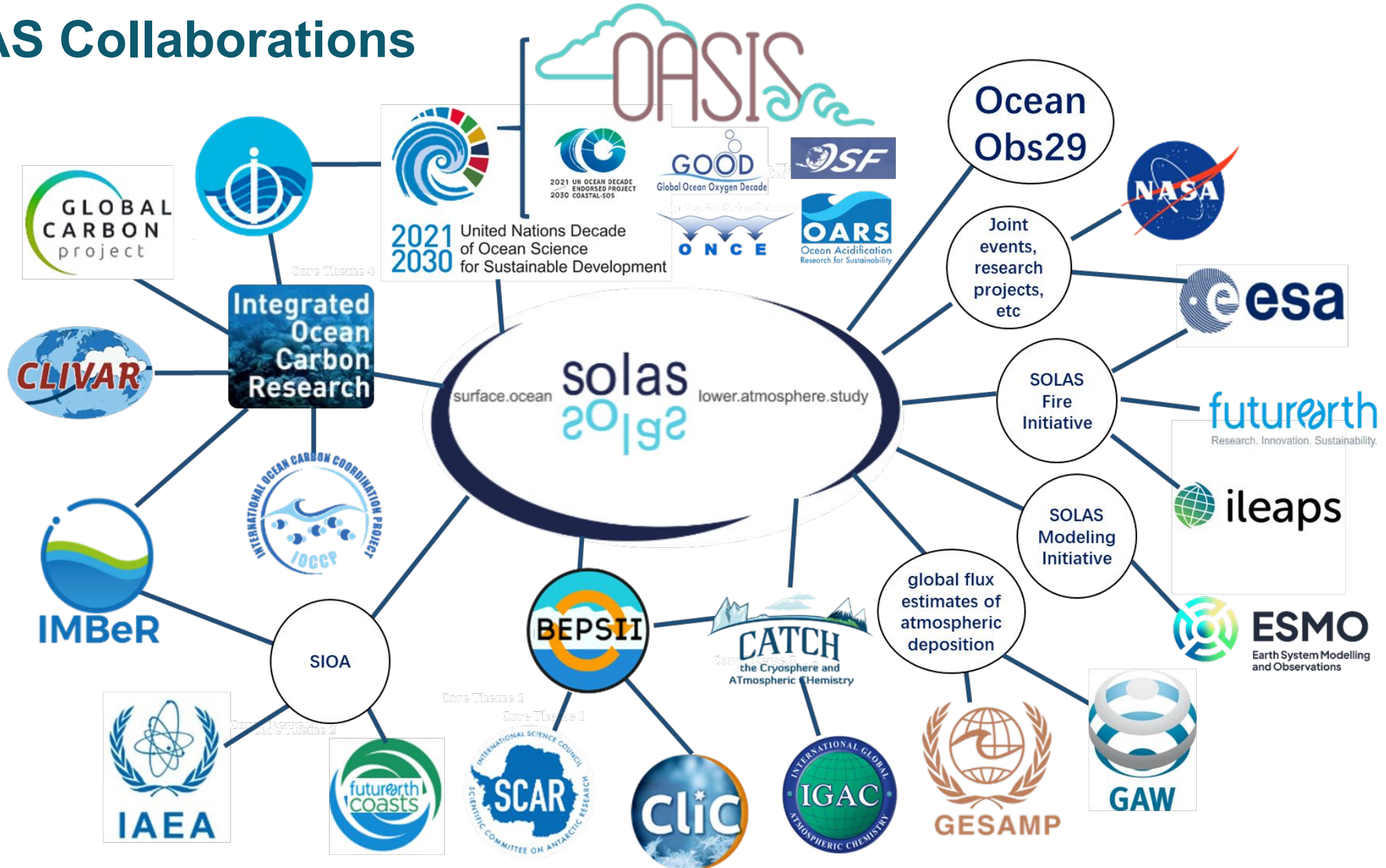
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SOLAS Collaborations



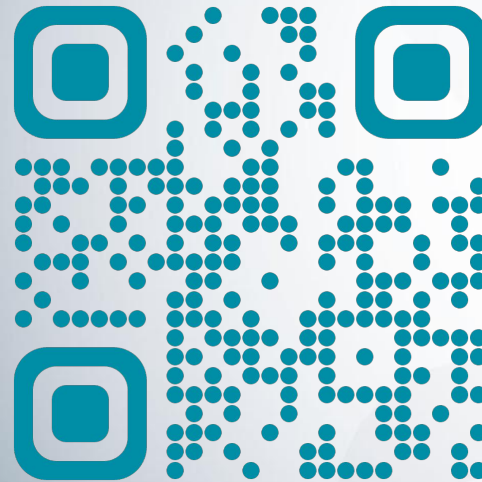
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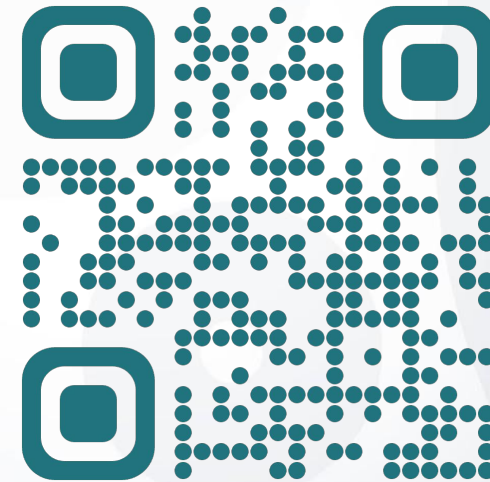
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Get Involved!

OASIS



SOLAS



Thank you!



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of Ocean Science
2030 for Sustainable Development