

SOLAS International Project Office
GEOMAR Helmholtz Center for Ocean Research Kiel, Germany;
State Key Laboratory of Marine Environmental Science, Xiamen University, China
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solas@geomar.com



Surface Ocean **solas** Lower Atmosphere Study
2019



SOLAS Mission

"to achieve quantitative understanding of the key biogeochemical-physical interactions and feedbacks between the ocean and atmosphere, and of how this coupled system affects and is affected by climate and global change."

How is SOLAS managed?

SOLAS International Project Office

IPO-Ireland

NUI Galway, Ireland
 Linked to int. MSc research program
 Executive Director: Jessica Gier

IPO-China

MEL, Xiamen University, China
 Deputy Executive Director: Li Li
 Project Officer: Chengcheng Gao

Germany

GEOMAR Helmholtz Centre for Ocean
 Research Kiel, Germany
 Project Officer: Esther Rickert
 (until Feb 2024)

Scientific Steering Committee

(18 members from 15 countries)

Co-chairs: Minhan Dai (China) and Cecile Guieu (France)

Members (early career)

Katy Altieri (South Africa)	Marcela Cornejo (Chile)
Erik van Doorn (Germany)	Santiago Gassó (USA)
Maria Kanakidou (Greece)	Arne Körtzinger (Germany)
Mohd Talib Latif (Malaysia)	Andrew Lenton (Australia)
Anoop Mahajan (India)	Lisa Miller (Canada, <i>ex officio</i>)
Peter Minnett (USA)	Jun Nishioka (Japan)
Jurgita Ovadnevaite (Ireland)	Anna Rutgersson (Sweden)
Parvatha Suntharalingam (UK)	Guiling Zhang (China)

Executive Committee

Katy Altieri, Jun Nishioka, Jurgita Ovadnevaite

SOLAS Sponsors:



SOLAS IPO Funders:

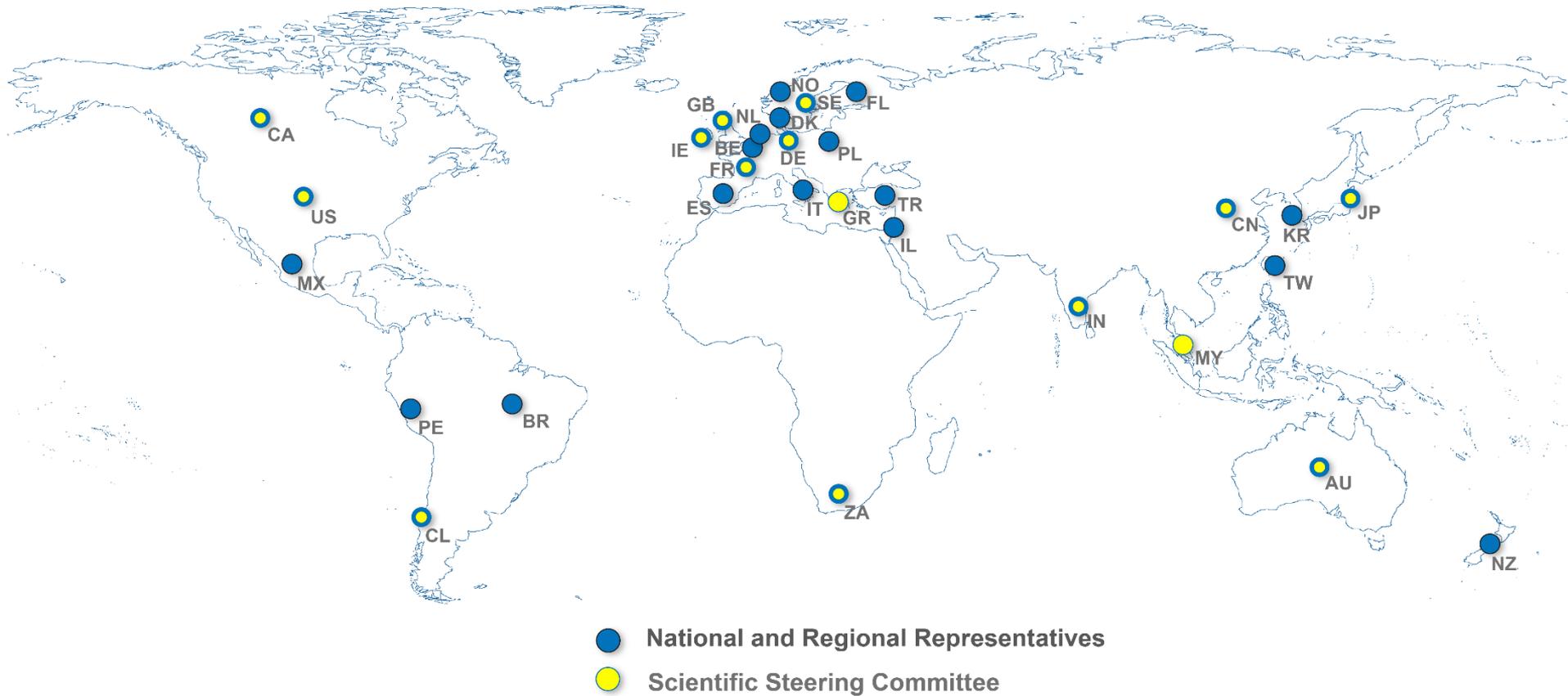


NUI Galway
 OÉ Gaillimh



近海海洋环境科学国家重点实验室 (厦门大学)
 State Key Laboratory of Marine Environmental Science
 (Xiamen University)

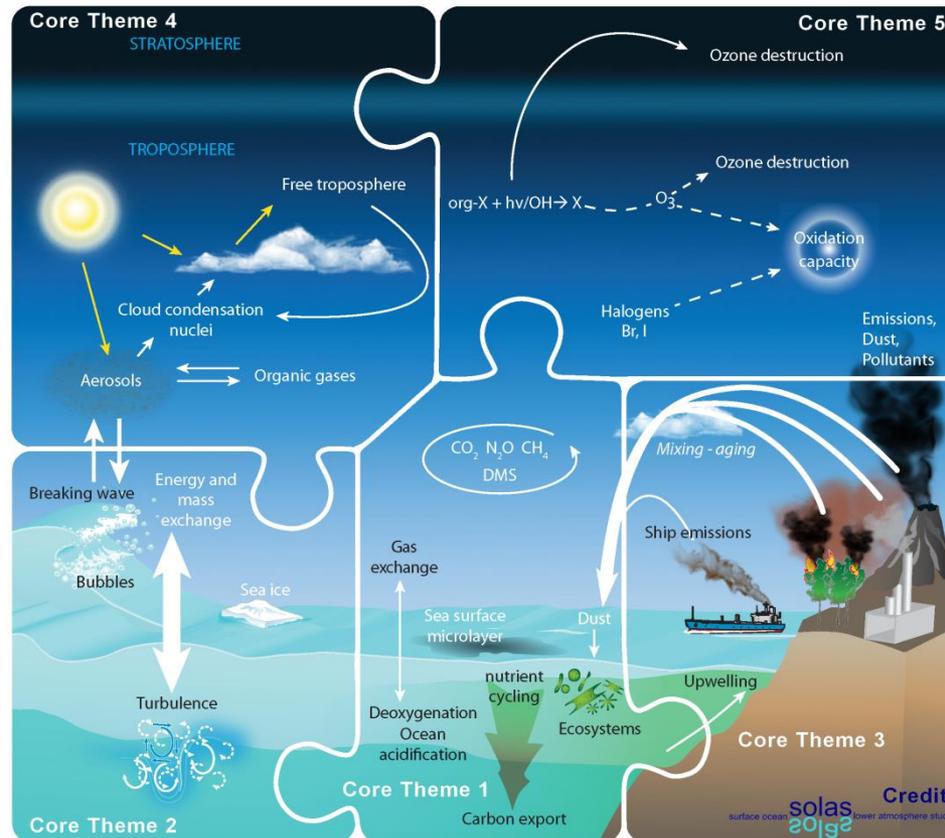
National and Regional Networks



SOLAS 2015-2025: Core Themes

4. Interconnections between aerosols, clouds, and marine ecosystems

2. Air-sea interface and fluxes of mass and energy



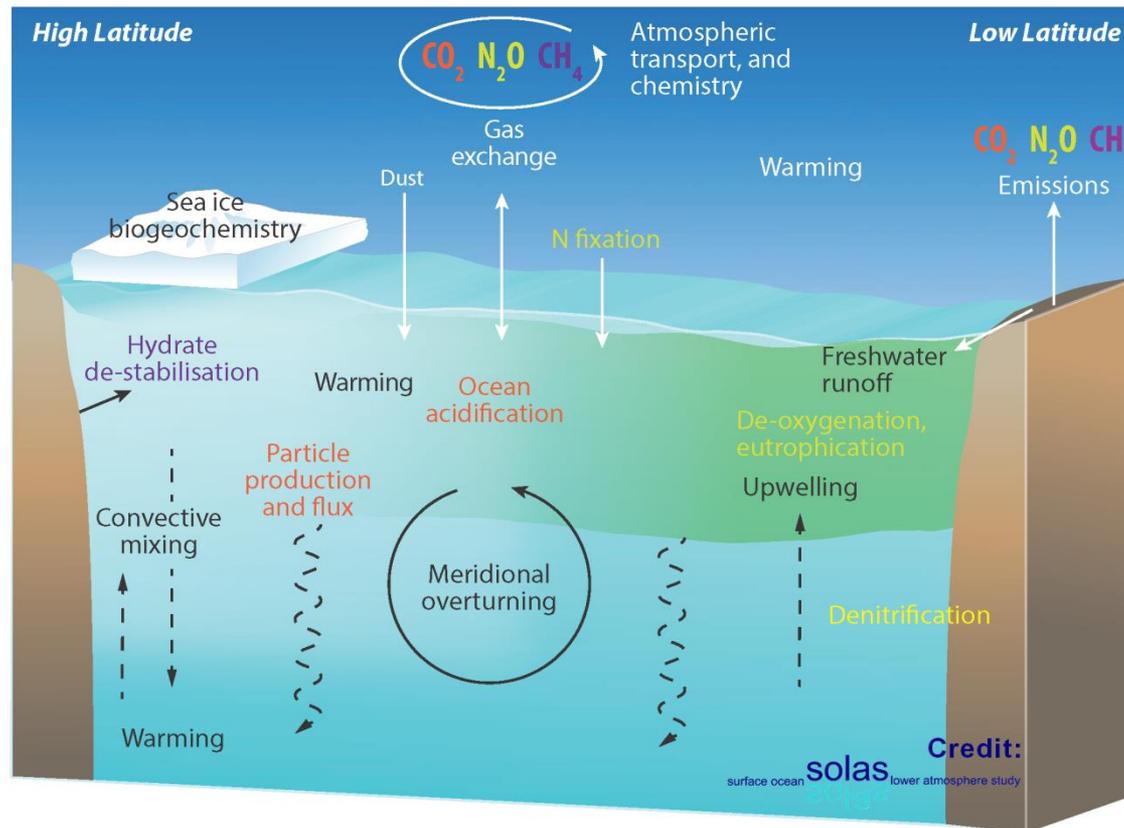
5. Ocean biogeochemical controls on atmospheric chemistry

3. Atmospheric deposition and ocean biogeochemistry

1. Greenhouse gases and the oceans

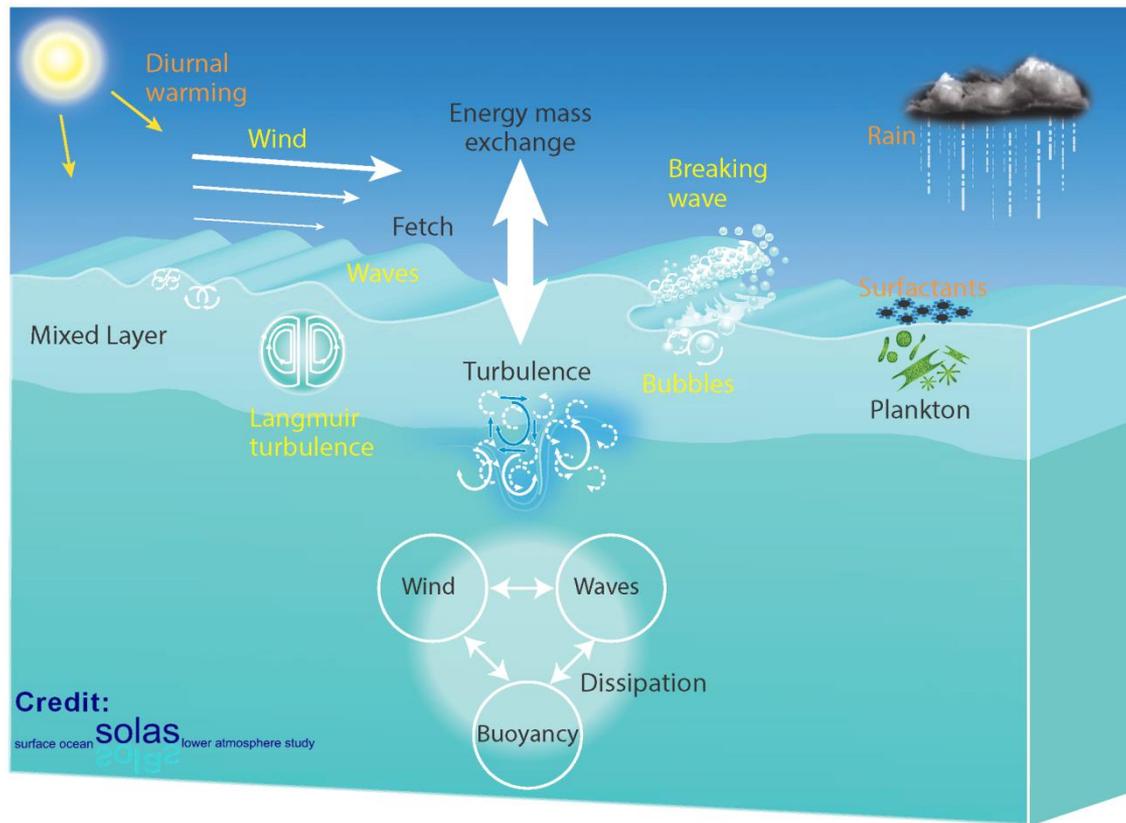
SOLAS 2015-2025: Core Themes

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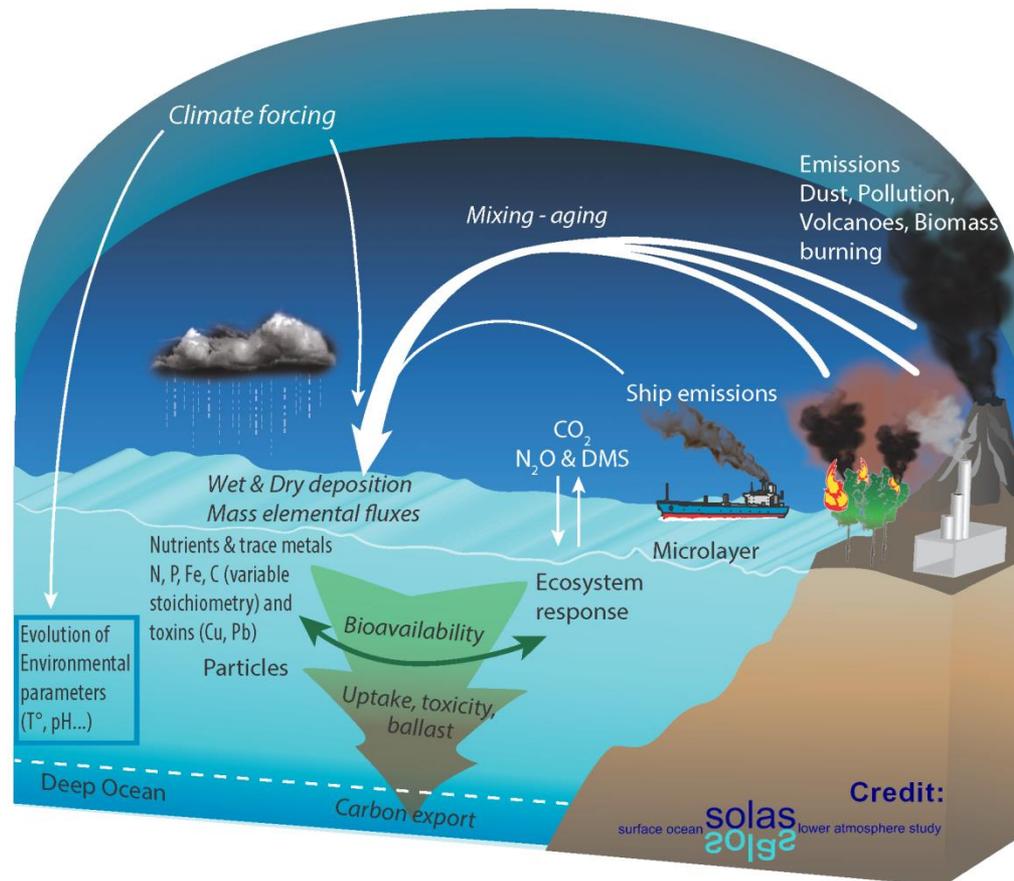
SOLAS 2015-2025: Core Themes

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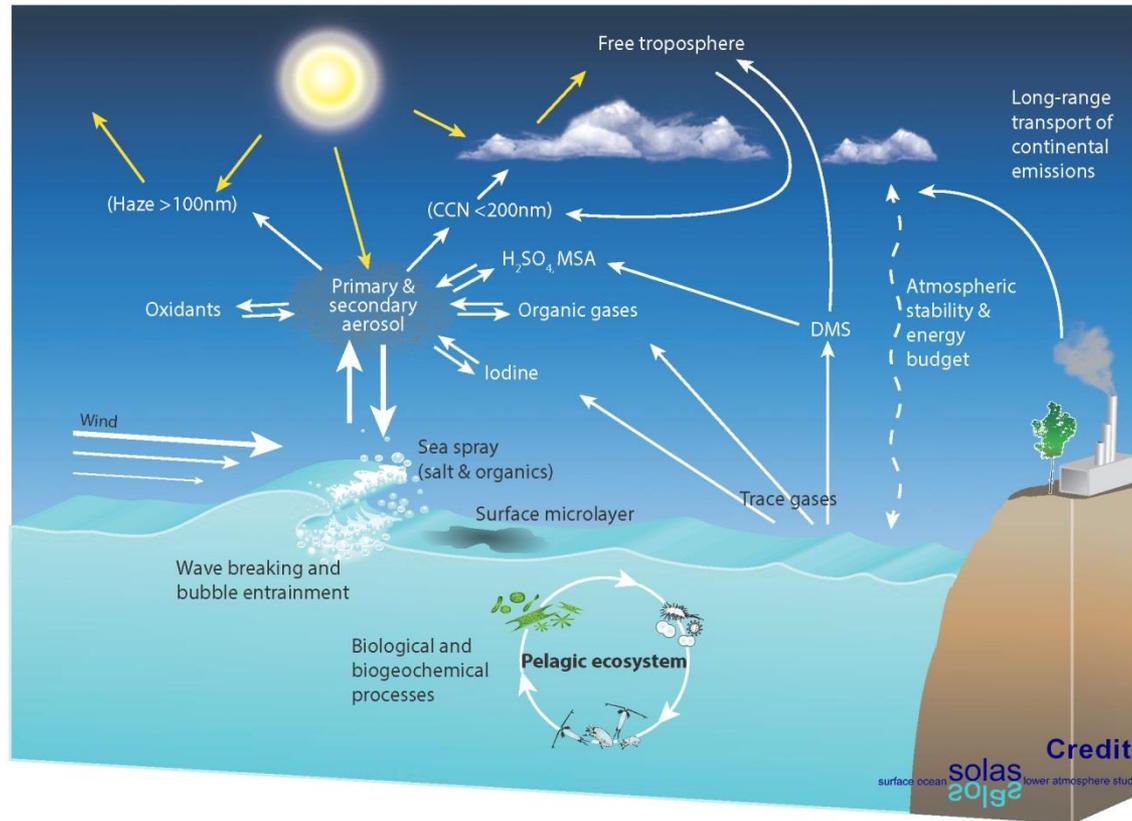
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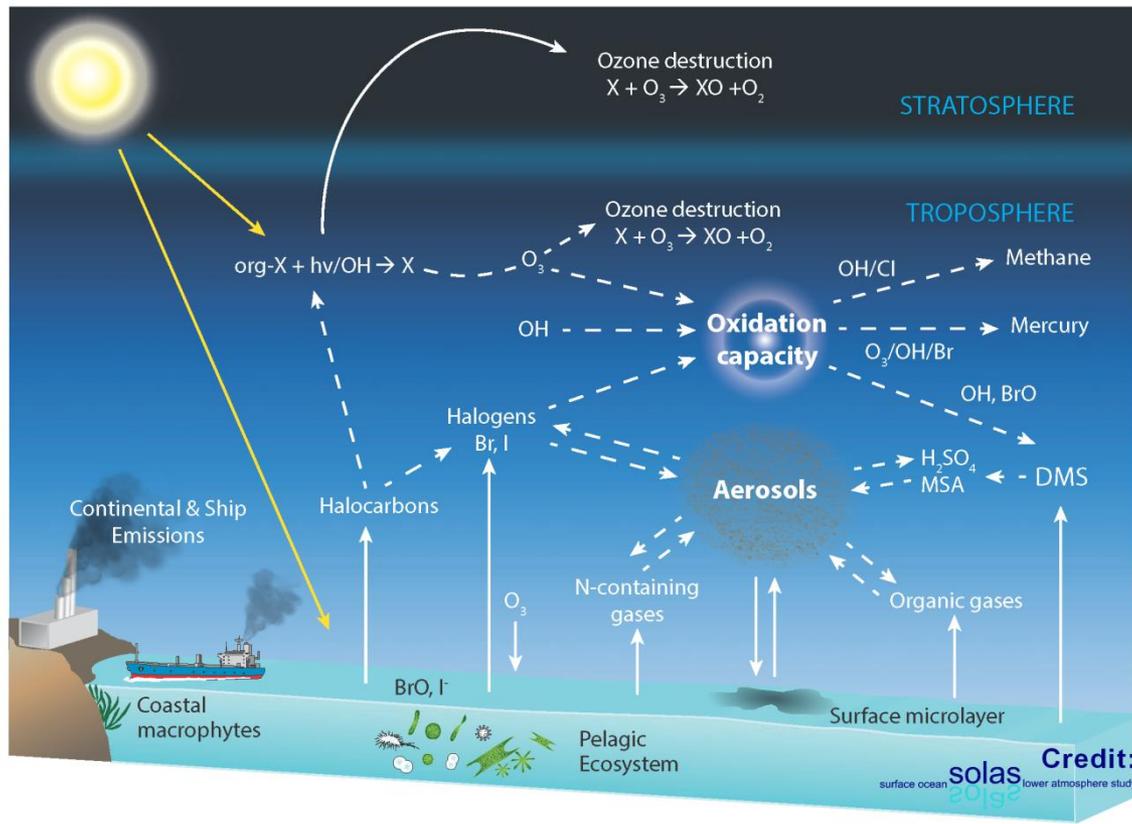
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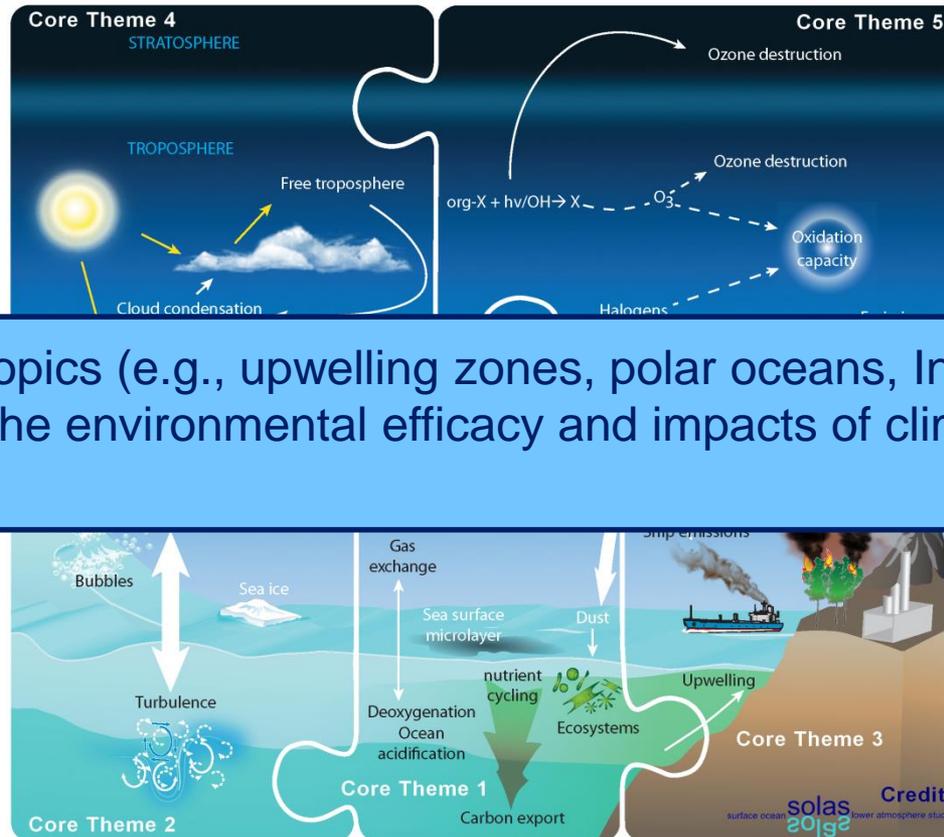


SOLAS 2015-2025: Core Themes

5. Ocean biogeochemical controls on atmospheric chemistry



SOLAS 2015-2025: Cross-Cutting Themes



- Integrated topics (e.g., upwelling zones, polar oceans, Indian Ocean)
- Evaluating the environmental efficacy and impacts of climate intervention

→ Science & Society: impacts of ship-plume emissions on ocean biogeochemistry, blue carbon, open-ocean stewardship

Sponsored Projects

- **Integrated Ocean Carbon Research (IOC-R) Working Group**
 - Jointly sponsored with IOCCP, IMBeR, CLIVAR and GCP, under the auspices of IOC
- **SOLAS/IMBeR Ocean Acidification (SIOA) Working Group**
 - OA-ICC advisory board
- **Biogeochemical Exchange Processes at Sea-Ice Interfaces (BEPSII)**
 - Jointly sponsored with CliC
- **Cryosphere and Atmospheric Chemistry (CATCH)**
 - Jointly sponsored with IGAC



Remote Sensing

Jun. 2016: Frascati, Italy.
 Harnessing remote sensing to address critical science questions on ocean-atmosphere interactions”, Neukermans, *et al.*, 2018, *Elementa*.

Mar. 2018: Washington, D.C., USA.
 SOLAS Event Report #9

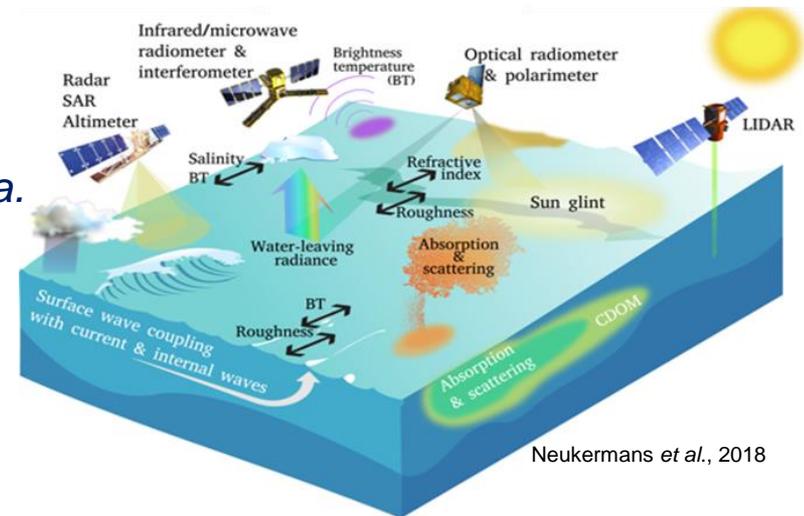
May 2019: SOLAS-sponsored session at the ESA Living Planet symposium, Milan, Italy

Aug. 2021: Remote Sensing journal SOLAS special issue on Remote Sensing of Air-Sea Fluxes

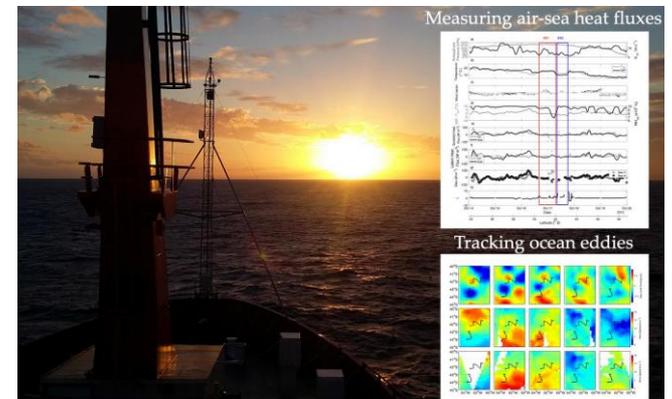
Dec. 2021: Workshop on Remote Sensing for Ocean-Atmosphere Interactions Studies & Applications, co-organised by EUMETSAT & Copernicus EU

Feb. 2022: Ocean Carbon From Space Workshop

2022: Workshop in Asia to better entrain Asian space agencies.



Neukermans *et al.*, 2018



Souza *et al.*, 2021

Upcoming SOLAS Events

- **Ship Emissions workshop, Mar. 2022**
- **Session on Air-sea chemical fluxes: Impacts on biogeochemistry and climate at EGU 2022, 3-8 Apr. 2022, Vienna, Austria**
- **53rd International Ocean Liège Colloquium, 16-20 May 2022, Liège, Belgium**
- **8th International Symposium on Gas Transfer at Water Surfaces, 18-21 May 2022, Plymouth, UK**
- **SOLAS virtual Summer School, Jul. 2022**
- **SOLAS Open Science Conference, 25-30 Sep. 2022, Cape Town, South Africa**



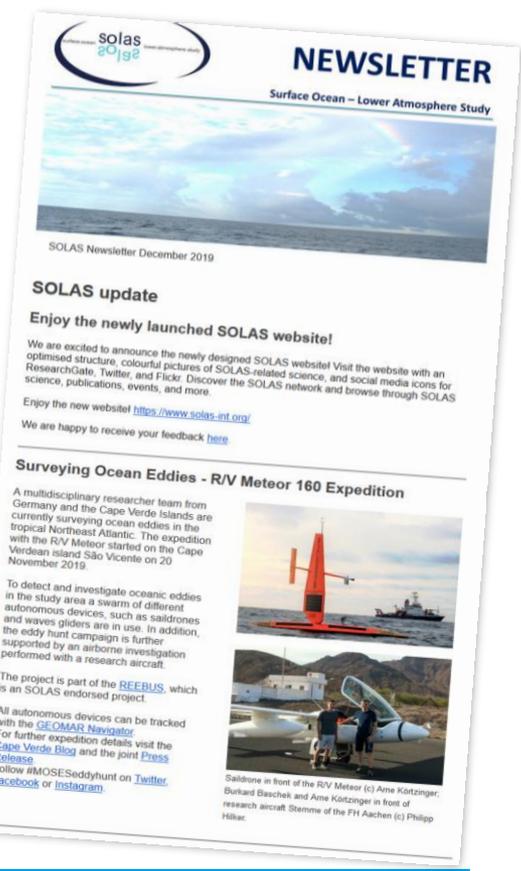
GO₂NE



Communication

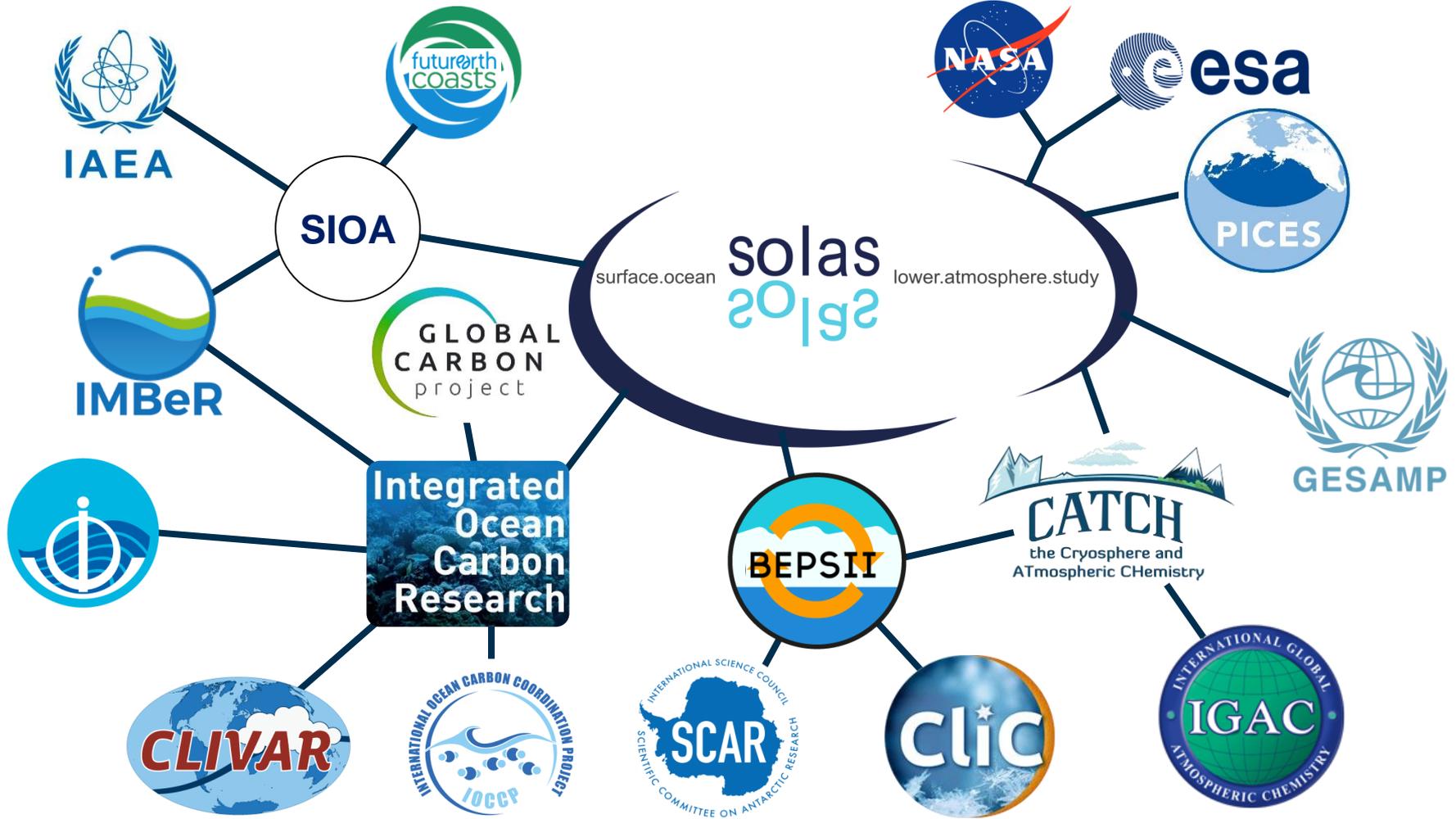
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<https://www.solas-int.org/news/join-the-mailing-list.html>



Extra slides

Examples of linkages with other organisations



SOLAS Capacity Building

New SOLAS Structured Research Master's Programme

- A new structured research 1-year Master's program in the area of Ocean-Atmosphere-Climate Interactions
- A collaborative project between the National University of Ireland Galway and SOLAS
- First admissions: September 2022
- Courses held in Galway, Ireland (4 core modules + 2 optional), and Research Projects conducted with leading SOLAS scientists worldwide
- Hosting agreement for 5 years





surface ocean **solas** 2019-22 lower atmosphere study



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