



The OceanoScientific Campaign

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The aim of the *OceanoScientific Campaign* is to collect scientific data from the ocean-atmosphere interface during the *SoloOceans*, which is a regulary starting round-the-world sailing race competed on equal footing.



The SolOceans Race



The *So/Oceans* Race

- **First single-handed round-the-world sailing race on equal footing: All participating yachts are from the new *So/Oceans* one-design Class.**
- **Course: France - New Zealand - France.**
- **In total 26,000 nautical miles (48,000 km) will be tackled in two legs of approximately fifty days.**
- **The course will round the Cape of Good Hope (South Africa), Cape Leeuwin (Australia) and Cape Horn (South America).**
- **More than half of the way will be in the realms of the Roaring Forties and the Furious Fifties.**
- **There will be one leg every year after the first start in October 2011.**

The SolOceans One-design



The *SolOceans* One-design

- Construction: Carbon Nomex Hexcel, pre-impregnated, cooked at 90°
- Length of hull: 16m / 52.5 ft
- Beam: 5.25m
- Draft: 4.10m
- Carbon keel: Canting up to 40°
- Height of wing mast: 23.66m above water line
- Engine: Nanni Diesel
- Communication: Iridium and Inmarsat
- Computer: Multicom (Windows XP) and NKE (Linux)



In 2007-2009, the *SolOceans* one-design has been tested on a total of 30,000 nautical miles (55,000 kilometres) between France, New Zealand, Germany, Malta and the US.

The *SolOceans* one-designs will also participate in other offshore races such as the *Transat Jacques Vabre*, the *Route du Rhum* and races of the *Rolex Circuit*.

The *OceanoScientific Campaign*

- Each *So/Oceans* one-design will be fitted out with scientific probes in order to collect oceanographic and meteorological data.
- SailingOne has initialised the campaign together with IFREMER, INSU-CNRS and METEO FRANCE. Further international institutes are supporting the project.
- Even if there are technical limits in weight, size and power-consumption, those aspects are not an issue in terms of competition within the one-design concept.
- The majority of the data will be sent via satellite in intervals of several hours to a data center and scientists worldwide will be able to have access to it.
- The system will be fully automatic, without any necessary intervention by the sailor.



The Scientific Parameters

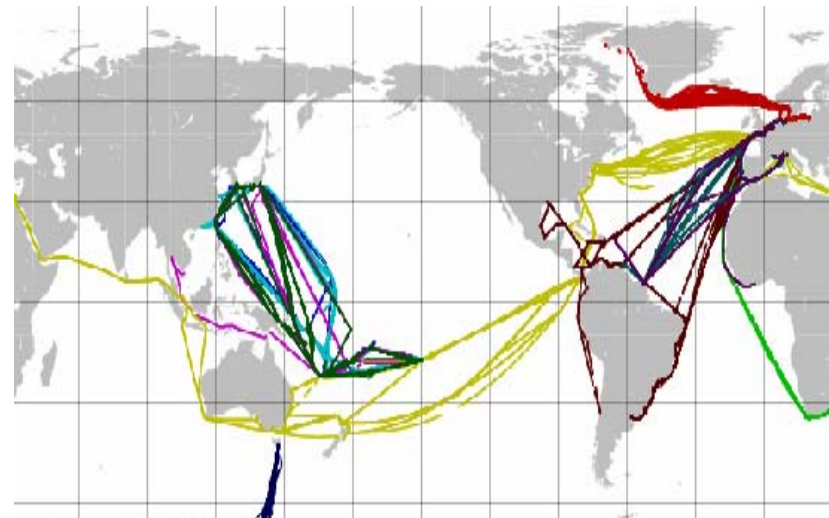
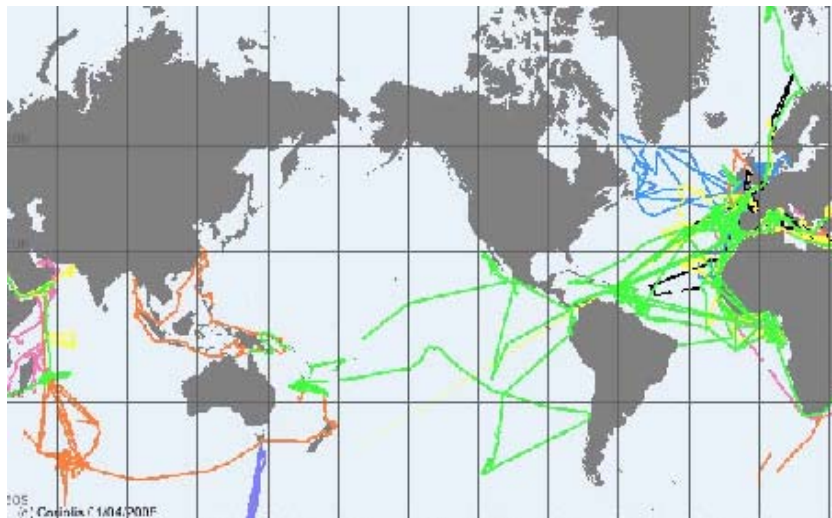
- In total scientists have so far determined eight parameters to be measured on board the *So/Oceans* one-designs:
 - ✓ True wind direction - True wind speed (NKE)
 - ✓ Humidity - Air temperature (ROTRONIC)
 - ✓ Air pressure (VAISALA)
 - ✓ Water temperature – Salinity (SEABID)
 - ✓ Partial pressure of carbon dioxide in seawater (CARIOCA / CONTROS)
- Parameters can be added or exchanged for others.

The Impact and Utility of the Campaign

- Compared with buoys and floats, the *So/Oceans* one-design fleet is neither anchored nor drifting very slowly and is perfectly suited for operating at the surface of the ocean.
- Compared with other VOS the *So/Oceans* one-design fleet also provides especially valuable services, as:
 - ✓ The recorded parameters are wide-spread and all-embracing,
 - ✓ The data of especially wind and SST will be very precise,
 - ✓ Closely the same route is followed regularly - every two years,
 - ✓ Our route is far from regular shipping routes in the Southern Hemisphere and
 - ✓ In most cases identically equipped sister ships are operating in the vicinity.
- As a consequence, the *OceanoScientific Campaign* will add important data to those collected by other systems.

Example: CORIOLIS Sea Surface Salinity (SSS) Data

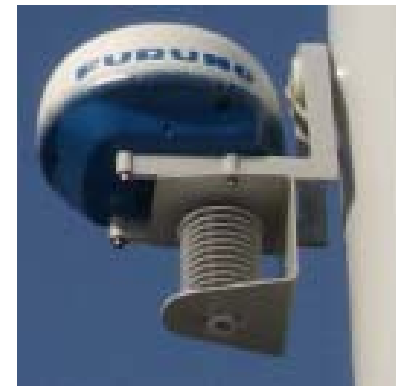
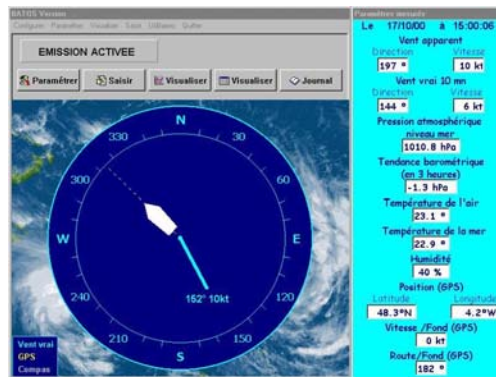
- At the moment, only a few ships regularly transmit salinity data to the CORIOLIS data center, half of which are research vessels.
- The CORIOLIS data (2005-2008) show that major parts of the *SolOceans* route are far from shipping routes of VOS and research vessels:



Research vessels (left) and VOS (right), which have transmitted SSS to CORIOLIS since 2005. Source: IFREMER

The AWS *BATOS* on our *SoloOceans* One-design

- After successful tests at the end of 2008, each *SoloOceans* one-design will be equipped with *BATOS* from METEO FRANCE.
- *BATOS*, which has already been successfully deployed on the research sailing vessel *Tara*, will be slightly modified:
 - ✓ Transfer of the wind data from the NKE-systems.
 - ✓ Upgrade of the SST probe.
 - ✓ Integration of further oceanographic data.
- A special mounting kit for the radiation shield was developed and successfully tested.



The seawater flow-through system

- **The *So/Oceans* one-designs do not permit the installation of a usual flow-through system (as Ferryboxes) for several reasons:**
 - **Performance and speed capacity of the *So/Oceans* one-design in changing offshore conditions**
 - **Intake close to the surface, with the risk of lots of bubbles in the seawater**
 - **Limited weight and size conditions**
 - **Limited electric energy**
 - **Low flow-rate**
- **The developpement and maintenance of the system with its debubbler, flow-meter, filter and pump requires further assistance.**

Come Onboard with us!

- There are many ways to support and work with us:
 - Ideas, suggestions, questions, ...
 - Equipment, maintenance, partners, ...
 - Events, media, branding, ...

Thank you!

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