

The Malizia Ocean Challenge

Estimates based on data from shipboard measurements suggest that the global oceans absorb roughly 25% of the human emitted carbon dioxide (CO₂) and thereby help to mitigate the effect of global warming. In the process of absorbing CO₂, the ocean is getting acidified with significant effects for marine life. Due to the vastness of the ocean and the high cost of sampling, most ocean regions, despite their crucial roles in the Earth's climate system, are still under-sampled.

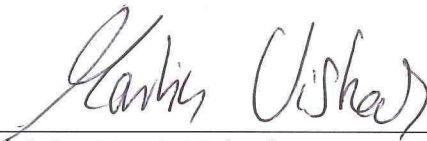
The United Nations 21st conference of parties (COP21) in Paris has set out the goal reduce greenhouse gas emissions to limit global warming to 2°C, and the UN Sustainable Development goals calls for limiting the ocean acidification. Both mandates call for increased knowledge on the ocean carbon cycle. There is a need for novel observing systems that overcome the limitations of the currently existing observing networks. One very promising way is to combine sail racing events with scientific data collection. This is what the Malizia campaign, initiated by Boris Herrmann, is set out to achieve.

Modern sensor technologies allow for continuous measurements of pCO₂ on-board racing yachts during their races. The Malizia campaign is aimed to provide pCO₂ data during its approximately 70.000 nautical miles of offshore racing over the next 4 years which include transatlantic as well as round-the-world racing, most prominently the Vendée Globe 2020/2021. In collaboration with experts from the Max Planck Institute for Meteorology in Hamburg and GEOMAR, and the Future Ocean in Kiel, the data will be used to estimate the exchange of CO₂ between the ocean and the atmosphere and the processes driving the exchange.

Besides the scientific goals, the Malizia campaign further fosters outreach activities. Schools and students will be actively involved in the collection and the analysis of the data, allowing them to gain experience in both the world of sailing as well as the world of science and to better understand how we can use novel methods to better monitor a changing climate and the health of the ocean exosystem.




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