

## ESSReS Research Projects

### Internal PhD projects:

- [Wave adjustment in a Finite Element Ocean Model](#)
- [Island effects on marine production and circulation around the Antarctic Peninsula](#)
- [Observation of Megacity pollution from space](#)
- [Carbon storage in geological formations: pressure evolution and leakage in large scale multilayered systems](#)
- [Changes of deep water carbonate ion concentrations in the Southern Ocean over the past glacial/interglacial cycles](#)
- [Ecosystem and climate: decadal pattern and spatio-temporal time series analysis](#)
- [Dynamic Resource-Aware Decomposition of Geoprocessing Services Based on Declarative Request Languages](#)
- [Latitudinal variations of long-lived trace gases from ground-based remote sensing in the infrared spectral region](#)
- [Interannual and decadal variability of sea ice concentration, drift, and thickness in the Weddell Sea](#)
- [Combination of microwave and optical satellite data for remote sensing of snow and sea ice](#)
- [Paleogeography and paleotopography: dynamic constraints for paleoclimatic simulation at long timescales](#)
- [<sup>18</sup>O modelling and comparison with marine and ice core data](#)

### External PhD projects:

- [Improving radiative transfer modeling from UV-VIS satellite spectra by accounting for ocean optical signals](#)
- [Investigation of the subsidence of air masses in the mesosphere in the north polar region using CO as a tracer](#)
- [Assessing Heterogeneous Gridded Datasets Using Flexible Web Services](#)
- [Evaluation of Eemian and Holocene Climate Trends: Synthesis of marine archives with climate modelling](#)
- [Satellite retrieval of phytoplankton biomass](#)
- [CO<sub>2</sub> impact on calcification in marine bivalves - a key to understand past, present and future climate records of polar ecosystems](#)
- [Benthic Habitat Mapping and Predicting of \*Lophelia Pertusa\* in Norwegian Margin](#)
- [Investigating the impact of extraterrestrial energetic particles on NO<sub>x</sub> and ozone in the middle and upper atmosphere on the basis of three dimensional model studies](#)
- [Control of seasonality and interannual to centennial climate in the Caribbean during the Holocene - Combining coral records, stalagmite records and climate model](#)
- [Establishment of ice core records of aerosol deposition with seasonal-to-interannual resolution and quantification of transport changes using dust size spectra](#)
- [Towards a Specification-based Quality Guarantee for Geo Raster Web Service](#)