

MarESys aims to assess integrated effects of climate change and variability in the ocean with a focus on ocean carbon feedbacks and marine ecosystem drivers. This will involve:

- coupling of the biogeochemistry/ecosystem model REcoM to the AWI Climate Model (then: AWI Earth System Model)
- advancing the representation of the biological carbon pump by incorporating sensitivities of phytoplankton to global change, and
- analyzing historical and future simulations of the AWI Earth System Model with state-of-the-art representation of the ocean circulation and sea-ice, eddy-permitting spatial resolution in key regions for CO₂ uptake, such as the Southern Ocean, and previously unaccounted sensitivities of the biological carbon pump to global change