TropEcS

In this project, we apply earth system models for the TropEcS expansion of the Leibniz Institute for Marine Tropics (ZMT). The overall goal of TropEcS is to better understand maritime coastal, bio-geochemical, ecological and socio-economic dynamics. In this compute project, we will establish a modelling framework for the physical and bio-geochemical processes at tropical coasts. We will apply the earth system model ICON to study physical interactions within the ocean but also in combination with the atmosphere. Furthermore, we will also simulate bio-geochemical processes and their interactions with physical processes. Our simulations will have very high resolution in the ocean since we aim to capture variability ranging from mesoscale to submesoscale dynamics. Therefore, we apply the zooming capacity of ICON ocean to refine the resolution at coastal areas. Beside the physical and bio-geochemical processes, we will also develop novel passive tracers and apply Lagrangian particle tracking to study the behaviour of pollutant and biological species.