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**Ocean biogeochemical tipping points in ESMs:
a regime shift in Arctic ocean chemistry ?**

I will present an overview of potential ocean biogeochemical tipping points and regime shifts identified within the EU Horizon 2020 project COMFORT. I will specifically focus on ocean biogeochemical tipping points and/or regime shifts identified from the outputs of CMIP5/6 Earth system model simulations. Within this context, the projected reorganization of the seasonal cycle of Arctic Ocean pCO₂ is of particular interest. The Arctic Ocean seasonal cycle of pCO₂ currently exhibits a summer low and winter high driven by the dominance of biological consumption/production of dissolved inorganic carbon. However, under high 21st emissions the seasonal cycle can exhibit a complete reorganization with the summer seasonal minimum becoming a seasonal maximum. This reorganization is due to the loss of Arctic summer sea ice, which leads to a previously biologically driven seasonal cycle of pCO₂ becoming progressively thermally driven this century.