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The Ocean's Alkalinity: Connecting geological and metabolic processes and time-scales

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The Earth system has entered a new geological epoch, the Anthropocene. The oceans' capacity to regulate atmospheric carbon dioxide (CO 2) at various
timescales is amongst the most crucial players to maintain climate on Earth in a habitable range. The biogeochemical property exerting this regulatory mechanism is alkalinity, the oceans' CO 2 and pH buffer capacity. The proposed project will investigate how the oceans' alkalinity is impacted firstly by human measures, required by the Paris agreement (COP 21) to mitigate climate change via bioenergy production and its downstream effects on shallow oceans, and secondly by climate change, in particular by increased weathering in the Arctic because of ice retreat.

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