Ocean-based Carbon Dioxide Removal: An emerging use case for regional and global scale oceanographic modeling

In this talk I will give an overview of ocean-based carbon dioxide removal (CDR) technologies – a set of promising carbon removal pathways that leverage and enhance the oceans natural capacity to remove carbon dioxide from the atmosphere. I will also introduce the audience to [C]Worthy – an independent, non profit R&D organization with a mission to help commercial ocean CDR companies access open-source ocean-biogeochemical models developed by the scientific community.   Here, I make the case that ocean CDR is a critical, emerging use case for operational oceanography.   Through a series of examples, I will demonstrate the role of regional and global oceanographic models in advancing our understanding of ocean CDR, in supporting the responsible permitting of ocean CDR pilot deployments, and – critically – in quantifying the amount of carbon dioxide that a ocean CDR project can remove from the atmosphere.

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