

# CGD Seminar Series

## Drivers of Atmospheric and Oceanic Surface Temperature Variance and the Coastal Ocean and Environment Summer School in Ghana

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**Date:** Tuesday 28 September 2021

**Time:** \*Special Time\* 4-5pm MT

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For live stream information, visit the  
CGD Seminar Webpage

### ABSTRACT

Ocean–atmosphere coupling modifies the variability of Earth’s climate over a wide range of time scales. However, attribution of the processes that generate this variability remains an outstanding problem. In this talk, I will present recent published work on air–sea coupling in an eddy-resolving, medium-complexity, idealized ocean–atmosphere model. The model is run in three configurations: fully coupled, partially coupled (where the effect of the ocean geostrophic velocity on the sea surface temperature field is minimal), and atmosphere-only. A surface boundary layer temperature variance budget analysis computed in the frequency domain is shown to be a powerful tool for studying air–sea interactions, as it differentiates the relative contributions to the variability in the temperature field from each process across a range of time scales (from daily to multidecadal). This method compares terms in the ocean and atmosphere across the different model configurations to infer the underlying mechanisms driving temperature variability. I will also share some preliminary findings applying the same method to the ocean in the CESM global climate model. The Coastal Ocean and Environment Summer School in Ghana (COESSING; [coessing.org](http://coessing.org)) is an international collaboration aimed at building capacity in oceanographic and environmental sciences in Ghana. In this brief talk, I will share some of the highlights of the yearly school since it started in 2015 from my perspective as both a main organizer and the lead instructor for Python computing.

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