

---

# Bayesian Analysis of a New Model of Ocean Heat Uptake

Balu Nadiga\*<sup>1</sup> and Nathan Urban<sup>1</sup>

<sup>1</sup>Los Alamos National Laboratory [Los Alamos] (LANL) – P.O. Box 1663, Los Alamos, NM, 87545, United States

## Abstract

A simple conceptual model of ocean heat uptake that accounts for Southern Ocean (SO) Ekman and eddy transports and North Atlantic Deep Water (NADW) in addition to diapycnal mixing is developed. This follows earlier work by Gnanadesikan and more recent work by Marshall and Zanna. Next, we examine the ability of the model to explain observations in a Bayesian framework. Finally, we discuss how simple models such as this can be used to characterize and inter-compare Earth System Models while also considering other simple models such as the Anomaly Diffusing Ocean Model.

---

\*Speaker