Abstract Submitted
for the DFD19 Meeting of
The American Physical Society

Predicting Interannual Variability of Climate using Deep Learning[1] BALASUBRAMANYA NADIGA, Los Alamos National Lab, CHANGLIN JIANG, AMIR FARIMANI, CMU — Predictability of climate over the interannual to decadal timescale (near term) is controlled by both natural variability related predictablity and external-forcing related predictability. Given that the field of near-term prediction of climate is in a nascent stage of development, we examine a deep learning approach to the problem. Preliminary work using a Long Short-Term Memory network architecture with added encoding and decoding is found to be capable of predicting an Earth System Models leading modes of global temperature variability with prediction lead times of upto a year. Related issues and further extensions are discussed.

[1]LDRD program at Los Alamos National Lab.

Balasubramanya Nadiga
Los Alamos National Lab

Date submitted: 30 Jul 2019 Electronic form version 1.4