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07 February 2023

To: Dr. Pierre Tando, Editor *Nonlinear Processes in Geophysics*

Re; Manuscript: “*Data Driven Regional Weather Forecasting : Example using the Shallow Water Equations.*”

Dear Dr. Tando,

We submit an extensively revised manuscript for this paper along with detailed responses to the two referees.

The issues presented by the two reviewers have been addressed in detail. We have added a new section on a benchmark evaluation of the error in the calculations discussed in the paper. It is Section 6 and the regional error metric is Equation (19) in that section. Section 6 also adds Figure 10 where the regional error as a function of time in the forecasting window is presented for each of the scenarios we discuss.

We also combined our results in each of the scenarios resulting in a reduction of the number of figures from 22 to 9 in the existing sections of the paper.

We express our appreciation to the two reviewers and to you for assisting us in improving the manuscript.

Yours sincerely,

Luke Fairbanks on behalf of Randall Clark, Ramon Sanchez, Pacharadech Wacharanan, and Henry Abarbanel

A handwritten signature in white ink on a black rectangular background, reading "L Fairbanks".