

Responses to Reviewer I's comments:

General comments:

This is a nice study. By extending the Lorenz systems to seven-dimension versions that include the different-scale modes, author analyzed the impacts of newly resolved small processes and the additional nonlinear terms on the stability of nonlinear Lorenz system in details. He emphasized the negative nonlinear feedback of small-scale temperature perturbation to stabilize solution. Manuscript is well organized and statements are clear and precise. This is an interesting and useful contribution to NPG and my recommendation is to accept.

Thanks for your comments very much.

Pg.19, Line 555: is ->are

I checked this part again and believe that it is correct. Thanks.