To the Editor:

We have revised our manuscript, “Dynamically Induced Displacements of a Persistent Cold-Air Pool” taking into account the comments and concerns raised by the reviewers, especially the in depth remarks of reviewer #2. Our detailed responses are attached.

The key change to the manuscript is reworking of the section pertaining to the tilt of the CAP (Section 3.5). Following the Reviewers #2’s comments that the equations became muddled we have simplified the number and extent of the mathematical expressions in favor of a simpler shallow water approximation of the system, which more clearly and conceptually illustrates the relevant mechanisms for producing and maintaining a tilted CAP seen in our observations. We have also included some additional analysis to help make this point more clear.

Another key change, following your request, is a reduction in the total number of figures from 19 to 15. A number of smaller changes have also been incorporated into the manuscript as detailed in the responses to specific reviewer comments.

Kind Regards,

Neil Lareau