

**[ For Topical Editor ]** We appreciate the topical editor's comments on the manuscript. Please find our response to each of your comments below.

*1. Please clarify "relatively less observation amount for moisture". Did the authors mean to compare the amount of moisture observations to other variables, such as wind?*

We realized that the statement is misleading. Originally, we were thinking of "effective" number of observation, which can affect the moisture analysis. Compared to the ensemble covariances, "relatively" less amount of observation may contribute the analysis of moisture variate in the univariate static covariance.

To make this more clear, we revise the text as... "This might be because the moisture variable is univariate in current B design (section 3.1), **while the moisture analysis in 3DEnVar or Hybrid-3DEnVar can be done through the multivariate ensemble covariances.**"

*2. I suggest that address the fact that the moisture variable is univariate in current B design may limit the performance of moisture analysis even with hybrid-3DVAR in the conclusion section (line 375).*

We added the text as follows in a given line: "**In current B design, the moisture variable is univariate that may limit the performance of moisture analysis even with Hybrid-3DEnVar configuration. To this end, we will explore ...**"