

The impact of external thermal forcing induced atmospheric circulation changes on air quality is an important issue in atmospheric environment study. Focusing this scientific issue, this manuscript presented an interesting finding on two pathways of thermal forcing sources in the North Atlantic region (R1) and the western North Pacific region (R2) drive the interannual variations of autumnal haze pollution in the air pollution region of North China via the tele-connection analysis and AGCM simulation, which could improve our understanding and prediction on air quality change in China, Asia and the Northern Hemisphere. This manuscript falls within the scope of ACP. I suggest the minor revisions before it is published as follows:

1) Please add the discussions on the tele-connection pattern from the R1 region to North China in connection with North Atlantic Oscillation, and the R2 region in association with Western Pacific Warm Pool.

2) Please modify the lines 20-21: the joint impacts can greatly enhance the likelihood of a higher AHD_{BTH} . Observational and simulation evidence suggests that SST anomalies can affect the variation.....

3) Lines 191 and 193, please add “surface air” before “temperature”.

4) Please add the box outlines the research domain of the BTH region in Fig. 7.