Review of "Ozone pollution in China affected by stratospheric quasi biennial oscillation" by Li et al.

Li et al. proposed a connection between ozone pollution in central China and the stratospheric quasi biennial oscillation (QBO) under the warm phase of the El Niño–Southern Oscillation (ENSO). This topic is interesting and can be potentially important. The authors are commended for their effort to explore the related mechanisms for the proposed connection between QBO and surface ozone in China. The paper reads well. I recommend the paper to be accepted subject to revision that addresses the following points.

L157-159, why? do the emissions change more largely than in other years during the period?

L161-171, Generally, the impact of climatic modes on some processes are investigated using monthly or seasonal climate indices with consideration of different lags, rather than the annual mean.

L258-265, For Figure 6, please explain why the spatial variation of the differences in TCO in (a) and (b) are deferent ?

L276-278, Please elaborate more about this method, how is the 1% calculated?

L287-289, an increase in the boundary height would actually dilute ozone concentrations in the surface. If so, how significant is this process?

L290-308, Table 1 is well done. It suggests that vertical transport is one of the causes for the proposed QBO-ozone relationship. I suggest that the authors provide a complete budget analysis that also includes other components, such as net chemical production and deposition, so it is convincing that vertical transport is the dominant factor.

L326-332, Can these statements be supported by the surface measurements?

Overall, the analysis can be carried out more comprehensively. How can changes in stratospheric wind field in the tropics be connected to surface ozone in the middle latitudes? Are the two climatic modes equally important? or one is more important? The authors can enhance their analysis and thus make their points more convincing in the revision.

Minor points:

Title: this paper is focused on summer season. "summer" needs to be indicated in the title.

L53, replace "it is" to "surface ozone is".

L67, "Yang et al. 2022"? which of "Yang et al. 2022". Please indicate "Yang et al. 2022a" or "Yang et al. 2022b" throughout the manuscript.

L149-152, this may be the case for some regions of China. Ozone pollution can be serious in other seasons in other regions of China.

L181, between 25° to 40° N, tropopause height decreases with altitudes largely from 100 to-250 hPa. Use a fix 150 hPa can results in some biases.