We would like to thank the reviewer for the useful feedback regarding our submission to ACP, and their recommendation for publication. We agree with the reviewer's opinion that we can better partition the methodology and results of this study. As requested, we will also be glad to include a brief summary of air forecasting models in the literature review.

Specific comments:

1. Beaver and Palazoglu (2009) point to the recirculation effects of the Fresno eddy, which as we state later, may appear to conflict with our hypothesis rather than support it. We are clarifying this aspect in the literature review.
2. We estimate that 0.2 cm $s^{-1}$ is an average value of ozone dry deposition at night in our region, and our stated error is 50%. Thus, the estimated variation due to changes in jet strength (~40%) is within our envelope of uncertainty.
3. The uncertainty of this coefficient is discussed in section 3.2 (lines 450-457). However, we will allude to this when the coefficient is first introduced.
4. While the last term represents the flux at the top of the NBL, the second to last term represents the surface flux. Thus, the flux divergence in the vertical direction is represented by the last 2 terms in equation 1.
5. The surplus of $O_x$ refers to the difference between the projected $O_x$ if there were only chemistry and advection at play, and the actual observed morning $O_x$. Since chemistry and advection has been modeled in this figure, we assume the difference between projected and observed is due to vertical mixing. We will clarify this in the text.
6. $dO_x/dt$ is calculated from the aircraft profile difference between the late night and sunrise flights. We will specify this in the text.
7. Thank you for catching this – this was misstated. We have changed the text to "Further, both losses of Ox added together are about triple the observed time rate of change, and thus the physical and chemical losses are largely (2/3rds) compensated by vertical mixing."
8. The error in the NBL height is included in the error propagation analysis for the eddy diffusivities.
9. We are extending the image further to the south to show the full SSJV. However, as the figure mainly focuses on observations, we avoid adding cartoon schematics of the mesoscale features, which are not fully known.
10. Done.
11. Done.
12. We have drawn a dotted dashed line in the figures to indicate the mean trough axis.
13. Done.
14. Here we are arguing that greater daytime photochemical rates (including those due to increased PAN dissociation) during warmer synoptic periods might be an additional factor that increases surface ozone. This would act in addition to less nocturnal mixing (due to the synoptic conditions favoring high temperatures making a weaker LLJ).
15. We have removed this figure from the manuscript in response to another reviewer, as it is not central to our thesis.
16. This is likely due to there being less shear immediately under the jet compared to the amount of shear in the surface layer.
17. We are assuming that the canopy resistance does not change.

18. We have increased the font size and sharpened the terrain in Figure 16.
19. Eddy diffusivities were the most practical way of estimating the NBL mixing due to the logistics of our study. We have changed the wording in section 3.5 earlier in the paper to make this clear earlier on, as requested.