

## Answer to Referee #2

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Referee #2 has brought our attention onto several points in our formulations and typographic setup. We are thankful for the attention he brought to these details of the work, and have corrected the points he has raised accordingly.

### **spectacular – > important ?**

As also noted by Reviewer 1, words as “spectacular” are rather non-scientific. This sentence has been reworded as:

*The increase of accuracy and the reduction of diffusion are substantial when*

...

### **suggest, describes : plural / singular ?**

As noted our use of plural / siingular for publications with more that one author was inconsistent. The correct use is plural (e.g. [Lachatre et al. \(2020\) describe](#)). This is corrected.

### **No extra space after equations**

This has been corrected (except in places in which a paragraph ended, materialized by a dot (.) after the equation. As also highlighted by the reviewer, dots (.) were missing after some equations that end a sentence / paragraph. We have added them where needed throughout. We believe that the Editorial office can help us further in correcting the typographic layout of equations and their environment, shall that be needed.

### **No extra space before comma (p. 4)**

This has been corrected.

### **1. 126, extra parenthesis**

this has been removed.

### **1. 131, missing dot**

Corrected.

### **1. 194, $w_0 - > W_0$**

Corrected.

**Fig. 1 : should be constant  $z$  ?? Check (26)**

As described in lines 207-211 of the manuscript, Eqs. 25-26 describe how the initially rectangular zone containing the tracer is transformed into a tilted parallelogram under the action of wind shear. The figure is in line with Eqs. (25)-(26) and the description in lines 207-211

## References

Lachatre, M., Mailler, S., Menut, L., Turquety, S., Sellitto, P., Guermazi, H., Salerno, G., Caltabiano, T., and Carboni, E.: New strategies for vertical transport in chemistry-transport models: application to the case of the Mount Etna eruption on March 18, 2012, *Geophys. Model Dev. Discuss.*, 2020.