

We sincerely thank the reviewer for his time and both thorough and constructive feedback. We respond **in blue** to the comments (*in black, italics*) below.

General comments

This paper fits in the scope of ACP, its topic addresses relevant scientific questions. The overall setup and instrument installation concept for the measuring campaign has been carefully chosen to match with the requirements of a meaningful data investigation. The title of the paper reflects its contents, leading the reader directly into the topics treated; this is supported by a precise abstract. Related work is sufficiently cited, the introduction contains an extensive discussion of how the new approach goes beyond the current scientific status.

The overall presentation is well structured and clear; the STRATfinder method to derive MLH from ceilometer raw data is sufficiently described in the supplementary material. Limitations of the STRATfinder method and of the overall approach are broadly discussed. One advantage of the paper in comparison to previous work on this subject are the extensive investigations towards morning transition and growth rate.

The amount and quality of figures, tables, references, supplementary material is good.

To summarize: My answer to questions 1-12 and 14-15 raised in the fifteen aspects that should be taken into account for a review is 'yes'. See https://www.atmospheric-chemistry-and-physics.net/peer_review/review_criteria.html

Technical corrections

Abstract

(+ 14 % and +28 %)

Please omit all blanks after + in lines 4, 6, 8.

Thanks for noting. Omitted blanks.

Line 40

The abbreviation UBL should be explained here, at its first occurrence.

Thanks for flagging that. We explained the abbreviation.

Line 41

The abbreviation ALC should be explained here, at its first occurrence.

Thanks for flagging that. We explained the abbreviation.

Lines 44-46

What affects cloud formation?

You should add the word 'that' before 'together' or reformulate the whole sentence.

We added “that” before “together”.

Line 79-80

While urban-topography induced...

We removed the whitespace; thanks for flagging that.

Lines 88,90

Météo France, n.d.a, n

Please explain the meaning of , n.

Thanks for flagging that. It has no meaning but was an artefact of two bibtex entries having no date. We corrected the citation to (Météo France, n.d.; Météo France, n.d.).

Line 117

Omit (GR)

Thanks for noting. Omitted.

Line 127

, instead of ;

Thanks for noting. Changed.

Line 130

Instead of

$$V_x - V_y/V_y$$

you should write

$$(V_x - V_y)/V_y$$

We corrected the equation accordingly.

Line 132

What are you exactly refering to with 'they'? SEB is singular. Please reformulate.

“They” was referring to the fluxes that comprise the energy balance. We reformulated the sentence from “they are” to “its fluxes are”.

Line 166

The word 'are' should be inserted before 'analysed'.

Thanks for noting. We reformulated the sentence in accordance with reviewer #2, to improve overall readability. Sentence now reads: *"To detect along or across transect differences, wind direction sectors (Table 1) were defined using the city-centre DWL (JUS) data, analysed from 1 h after sunrise to 0.5 h before sunset for gates between 300 m above ground level (agl) and the approximate top ALC MLH of the sites used."*

Line 176

'mixed layer height'

Corrected, thanks.

Line 199

A 'μmolm' may confuse the reader; for better understanding, add a blank between 'mol' and 'm'.

A blank was added.

Table 2

'Eiffel Tower', not 'Eiffeltower'

You should omit all 'and's after ';

Thanks for flagging; both corrected.

Line 210

'rural', not 'the rural'

Removed the redundant "the".

Figure 7

'derived from eddy covariance'

Thanks for noting. Added the "from"

Line 282

'at any downwind', 'at any upwind'

Added "at" at both instances.

Figure 13

The part

'as number of days available varies n for each given (small text) with % determined relative to that for each pair.'

is a bit confusing.

I do understand what is meant, but would prefer a version that is a bit more clear, possibly splitting the contents in more sentences.

Good point, we split the sentence and reformulated it as follows to improve clarity "Number of days available (n, small text) varies for each given pair, with % determined relative to that."

Line 347

'find no clear spatial'

Corrected, thanks for noting that.

Line 348

Something is missing, I suppose you mean

'boundary layer (NBL) is partly due to'

Thanks, we corrected that.

Lines 407-409

'That is disproportionately the SW urban fringe (SIRT) (Table S1, Sect. 4.7) located on a 10-km plateau about 160 m asl (Haeffelin et al., 2005).'

Something seems to be missing in this sentence, please correct.

We added "often" to clarify. Sentence now reads: "That is disproportionately often the SW urban fringe (SIRT) (Table S1, Sect. 4.7) located on a 10-km plateau about 160 m asl (Haeffelin et al., 2005)."

Line 438

Omit the 'While'

Omitted the "while".

Line 468

'rural site than at the downwind'

Thanks for flagging that. Added the “at”

Line 544

The part 'can be simulated;' does not seem to fit in this sentence, please correct.

Thanks for noting. The sentence was split into two parts to make it clearer and now reads:
*“Future work will use these data to evaluate numerical weather prediction models (NWP) at
hectometric scales (e.g. Glazer et al., 2025), and investigate the spatial and temporal
variations. The spatial extent of the urban influence can be simulated while exploring
underlying processes.”*