

Reply

In blue we copied the referee's comments, in black our reply.

Comments to authors 2

General comments 2

The manuscript is revised perfectly except for "Specific comments, 2)" that is needed additional modification and explanation. I noticed additional typos and listed them in Technical corrections 2.

Specific comments 2

2) Page 6, lines 4 to 8 of the original manuscript. As authors mentioned in their reply, Ψ_S is defined as mass of water vapor divided by mass of dry air. The numerator in the new equation (7) in the reply is not $m_{liq.water}$ but $m_{vap.liq}$ as shown below.

$$\Psi_S = \frac{m_{vap.water}}{m_{dry.air}} \quad (7)$$

The new equation (8) is rewritten as the equation (8').

$$\Psi_L = \frac{\rho_{LWC}}{\rho_{air}} \quad (8)$$

$$\Psi_L = \frac{m_{liq.water}}{m_{dry.air}} \quad (8')$$

Reply:

Thanks for the correction of equations 7 and 8. Actually, we meant the vapor water in the air. We will include those changes in the final version of the manuscript.

The problem is how the value of ρ_{LWC} in the equation (8) or $m_{liq.water}$ in (8') is estimated. Generally speaking, direct measurement of liquid water content (LWC) in the air is difficult and it seems that no instrument to measure LWC was installed at the site. I think authors used some estimated values. Please specify how ρ_{LWC} or $m_{liq.water}$ was estimated.

Reply:

Indeed, we used an estimation of the liquid water content of the air according with Thomsson (2007). Due to the characteristics of the vapor plumes formed during the monitoring period, we choose the liquid water content of fog events of 0.05 g m^{-3} . We proposed to add the following sentences in the methodology as follows:

"Due to the lack of instrumentation to estimate the liquid water content in the air, we used a fixed value of 0.05 g m^{-3} . This value corresponds to the liquid water in the air reported by Thompson (2007) for fog events. Using this value and the specific humidity of the air.....The selection of this value was based on (1) the similarity in terms of color and transparency between the vapor plumes and fog, and (2) because both types of events occur close to the ground surface."

Technical corrections 2

18) Page 2, line 23

Please insert "being" between "techniques" and "able".

Reply:

Thanks for the correction. We will include it in the final manuscript.

19) Page 7, line 20

Please add "with" between "2°C" and "respect".

Reply:

Thanks for the correction. We will include it in the final manuscript.

20) Page 8, line 27

a lower density than air above -> the dew point temperature

Reply:

Thanks for the correction. We will include it in the final manuscript.

21) Page 8, line 31

formation of -> they form

Reply:

Thanks for the correction. We will include it in the final manuscript.

22) Page 10, line 7

is more easy to move upwards the parcels of air

-> it is easier for the air parcels to move upwards

Reply:

Thanks for the suggestion. We will include it in the final manuscript.

23) Page 10, line 18

Spellman (2012) -> (Spellman, 2012)

Reply:

Thanks for the correction. We will include it in the final manuscript.

References

Thompson, A.: Simulating the adiabatic ascent of atmospheric air parcels using the cloud chamber, Department of Meteorology, Penn State, 2007.