Dear reviewer

Thank you for your comments. Please find below my response in **BOLD**

With kind regards, Siebren de Haan

Going through the script, I have some questions regarding the error estimates for humidity and virtual temperature, and only minor issues elsewhere:

- line 29: Enhanced Surveillance (EHS): **DONE**
- line 82: with a temperature of T_0 = 288.15 K **DONE**
- line 85: also define g_0 **DONE**
- line 126: "using Taylor" is a bit misleading here, since Gaussian error propagation is used citing Taylor as a source, while line 139 says "applying again Taylors approximation". Even though Gaussian error propagation technically is a Taylo approximation, it would be more clear to say "can be approximated via Gauß, according to Taylor (1997)" in line 126 and "and an estimate of the error can again be obtained via Gauß (Taylor 1997)" in line 139.

I added the assumption that the errors are Gaussian

- line 127: Explain here, how the $\sigma^2_{T_\nu}$ term disappears. It seems like $\sigma^2_{T_\nu} \approx \sigma^2_T$ was used here, which has to be stated in that case. Also the error should scale with $1/\delta^2$ then, i.e.: $\sigma^2_q \approx \frac{2}{\delta^2 T^2}\sigma^2_T$

Correct: i used that $\sigma^2_{T_\nu} \approx \sigma^2_T$ and indeed the δ must be squared.

- line 140: "(neglecting the last term)" actually all terms containing β_0 seem to be neglected. Please also elaborate on why those terms can be dropped.

I added to the text:

(neglecting the last term, which is of the order of β_0^2, and using $T_0 > T_0 - \beta_0 H$)

and I corrected the equation: I forgot to square the $T_0/\Delta H$

- Figure 2: "Two solutions are show: in blue denotes the solution" –> "Two solutions are shown: The blue lines denote the solution" **DONE**
- Figure 2: "The bottom two lines expresses the average difference" –> "The bottom two lines express the average difference" **DONE**
- line 213: "The resulting statistics are show" –> "The resulting statistics are shown" **DONE**
- Figure 6: This can be enlarged to a full page, since the individual Figures are quite small. *I will consider this*
- line 285: "MetoeFrance" –> "MeteoFrance" **DONE**