

Review about the paper "Comparing turbulent parameters obtained from LITOS and radiosonde measurements" (revised version by Schneider et al.)

General comments

I am rather satisfied with most answers of the authors to my (numerous) questions. Thank you to the authors for specifying many details. Even if I have always doubts about several aspects of the data analysis and about the interpretation of the results, I found the paper substantially improved. These remaining issues (see comments below) will hopefully feed future stimulating debates about turbulence detection and measurements in the atmosphere. I recommend publication.

Comments and issues

(The numbering refers to the one of the reviewer#1-questions/authors-responses)

2) I am very surprised with the results obtained by including the effects of moisture on the vertical stratification. To my experience in that matter, the effect is dramatic if clouds exist (see the figure 4 in Wilson et al., AMT, 2013).

3) I do not understand the reported TNR: according to my experience, the TNR is substantially larger in the stratosphere than in the troposphere due to larger $(d\theta/dz)$. The authors obtained an inverse results. Also a value $TNR = 12$ in the troposphere (for BEXUS 12) implies a noise level $\sigma \sim 3\text{mK}$ (by taking $d\theta/dz \sim 3\text{e-3 K/m}$ and $\Delta z = 10\text{ m}$). Such a low noise level for radiosonde measurements is very unfamiliar for me. From Vaisala radio sonde, I estimated the noise level to be few 1e-2 K (see figure 3 of Wilson et al., 2011).

About the fact that 2 bins layers passed the significance test: I think that a statistics from a sample of 2 elements is for the less highly doubtful.