

***Interactive comment on* “Method for evaluating trends in greenhouse gases from ground-based remote FTIR measurements over Europe” by T. Gardiner et al.**

Anonymous Referee #2

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General Comments:

This is a good paper that reports the development of important statistical tools for trend analysis from instruments making remote sensing measurements of atmospheric composition. It is not clear from the paper whether or not the tools described are available publically for use by others. I would expect interest from other groups would exist.

Specific Comments:

1. The descriptions of total column amounts and partial columns are not clearly given.

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These should be defined properly and units given. 2. The term z =mean layer altitude is given without any explanation of the fact that the analysis of spectra to determine total column amounts requires a model of the atmosphere with different layers each assigned with temperature, pressure and a priori concentrations. 3. Section 2 line 4: The phrase "time series of vertical profiles of partial columns" is not clear. Again an explanation of partial columns is required. 4. At the end of section 2 a sentence that states that the weighting function results in values of near 1 for layers well below the tropopause and near zero well above the tropopause will spare the casual reader the effort of plugging in numbers to understand the gist of what is being done. 5. At no point are the time spans given for the data from each site. Is this the reason for a different result at Izana? 6. In figure 1 the model does not capture the magnitude of the intraannual variability. Why is this?

Technical Corrections:

1. Section 5.3 line 24 and line 28 refer to figure 3 when they should say figure 2.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 15781, 2007.

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