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Interactive comment on “A method to correct sampling ghosts in historic near-infrared Fourier Transform Spectrometer (FTS) measurements” by S. Dohe et al.

Anonymous Referee #2

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When using Michelson interferometers in spectroscopy, potential sampling errors in the recording of the interferogram can lead to artificial spectral features, named ghosts. For a quantitative analysis of the spectra, for example to derive atmospheric trace gas concentrations from solar absorption spectra, these errors can lead to wrong results. This is of special importance for trace gases, where a comparability of different measurement sites is required, like for CO₂, measured within TCCON. In order to study the long-term variability of trace gases, it will be necessary to correct these ghosts also in archived spectra.

In a first paper by Messerschmidt et al, these ghosts have been detected, and a sim-

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ple empirical correction method has been developed. The paper by Dohe now gives a much more detailed fundamental correction method, where the interferograms are subsequently iteratively resampled to the correct grid to eliminate the ghosts in the spectra.

The paper is well written, describes the topic in all details, and is appropriate for AMT. I have only a few minor comments: Page 3554, equations 3 and 4: epsilon zero is not defined. Page 3555, lines 11-14: These sentences belong also to the abstract. Page 3555, line 16: I would mention here also the HFL= 15798 cm⁻¹. Page 3577: Figure 8 should be described in more detail

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