

Interactive comment on “Instrument concept of the imaging Fourier transform spectrometer GLORIA” by F. Friedl-Vallon et al.

Anonymous Referee #2

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General comments

This paper describes a summary of a well known instrument which gives a fundamental contribution to the atmospheric research in Europe and deserves a special issue on AMT. Some of the information summarised in this paper is partially already described in other papers such as in Atmos. Meas. Tech., 3, 1647-1665, 2010 or in Atmos. Meas. Tech., 7, 13-27, 2014 or in papers submitted for the current special issue on GLORIA. However this work is well written and can give a introductory survey to the other specific publications of the special issue. Therefore I recommend it for the publication as an introduction paper on GLORIA with some additions as outlined here-below in the specific comments.

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Specific comments

- The paper title refers to the instrument concept which is well described in the text, however I would have expected some more information with figures about measurements acquired directly by the instrument itself (L1 products), such as spectra or the off-axis pixel effect on ILS and noise. Instead most figures are about elaborated results, only the last Figure 10 is devoted to plot a quantity directly measured by the instrument. I would add at least some figure with spectra and a short discussion on how off-axis pixel are managed in the analysis.

- The description in Sect. 2 about the choice of instrument requirements based on scientific issues is generally made with reference to other papers. This is complex to follow. I would try to improve clarity giving a short description, in the cases where it is missing, of the scientific question driving a specific requirement. For ex. at page 2305 line 22 the "scientific interest" should be described with some words for improving information and the clarity of the sentence without requiring to read the cited reference.

Technical corrections

- Abstract, page 2303, line 8 The paper describes only CM and DM operations, so it is not clear the meaning of "Measurements are made predominantly", I would remove "predominantly"

- Introduction, page 2303, line 21 Correct: " ... range from replying questions of .."

- page 2305, line 1 Correct: Barré

- page 2306, line 22, 23, and 26 Use always the same formalism throughout the text to indicate: target (threshold), i.e. 1% target (2% threshold)

- page 2315, line 13 It is not clear the meaning of " resolution of T1279 ..", please correct or give more information

- page 2317, line 25 I would not put these two References here in the Conclusions

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since they are referring to an introductory subject rather than a conclusion of this work.

- page 2319-2323 The reference list is very wide and complete, however there are 7 papers in preparation or under discussion that should be checked after the acceptance process.

- page 2325, tab. 2 Use the same formalism for " target (threshold) " as in the text (see comment above)

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 2301, 2014.