

The paper by Zhao et al. reports on the preflight calibration of the Chinese Environmental Trace Gases Monitoring Instrument (EMI). Wavelength calibration of the instrument, a thermal vacuum test to investigate the impact of in-orbit conditions on the whole system and the radiometric calibration are described in detail and results are shown. Furthermore, the expected signal-to-noise ratio for each channel has been estimated using model calculations.

This review refers to the modified manuscript submitted by the authors on June 30. The manuscript is in general clearly written and I recommend it for publication in AMT. However, the authors should consider following comments and recommendations.

Section on performance requirements: The authors should give some information on what these requirements based on. I recommend putting the information either in a table or in proper sentences. Please add this section after the general instrument description.

Instrument description: I'm wondering, why the expected spatial resolution in the Visible is smaller than in the UV since the expected intensity should be larger.

Thermal vacuum test: I'm wondering about the relatively small temperature range investigated in this study. Is this really something to expect in reality?

Radiance calibration, Dark signal: The authors stated, that the spectrometer in the Visible has temperature control and changes of the CCD are therefore not an issue. Again, the question: Is this true under real in-orbit conditions e.g. when the system comes from the dark to the illuminated part of the orbit?

SNR (do not use an acronym in the caption): Table 8 and also some sentences concerning the SNR should move from the Conclusions section to the SNR section. In general, I'm a bit unsettled that the assumption of an albedo of 0.3 in the SNR simulations is useful. For most of the relevant scenes the albedo is much lower!

Minor corrections

- Line 11, please change to launch date
- Line 25f: Check sentence for clarity
- Line 29f: Check citations - I recommend to use following publications instead:
Burrows et al.: The global ozone monitoring experiment (GOME): Mission concept and first scientific results, 1999
Bovensmann et al.: SCIAMACHY: Mission objectives and measurement modes, 1999
Levelt et al., The Ozone Monitoring Instrument, 2006
- Line 96: travels instead of travel
- Line 145: ...considered as a Gaussian-type function ...
- Line 155: ... and the accuracy of the FWHM ..
- Line 161f: A mercury argon lamp is used as light source for EMI ...
- Figures 5 and 6: What is NTC??
- Line 207: ... are presented ...
- Line 224: Write solar calibration mode (SCM) in caption
- Line 279: Table missing?
- Line 308: about 0,5% per what??

- Line 316, Figure 8: ... for ... instead of ... under ...
- Line 332: ... check sentence for clarity ...
- Line 346f: Check numbers given here!!
- Line 358: Based ...
- Line 429f: ... have been discussed elsewhere ...
- Line 450: ... are recorded ...
- Line 467f: .. of the SNR ... and check sentence for clarity
- Line 470f: I'm not sure, what the authors would like to point out here.
- Line 472: The simulation of the ... in the UV2, ... channels are ...
- Line 473: ... of channel UV1 ...
- L481f: Numbers given here are different to numbers in Table 8!