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Interactive comment on “Reconstruction of the solar spectral UV irradiance for nowcasting of the middle atmosphere state on the basis of LYRA measurements” by T. Egorova et al.

Anonymous Referee #2

Received and published: 11 April 2008

This paper describes a method that can be used in order to reconstruct solar UV irradiance at a wide spectral area (160–680nm) based on available measurements in narrow spectral bands. The wider spectral band is used in the nowcasting and short-term forecasting of the neutral and ionic state of the middle atmosphere.

Overall this is an interesting paper, generally well organized and clearly written. I recommend publication after processing the comments and suggestions mentioned below.

1. Introduction p 4101, lines 19–20: I do not understand the sentence “..Its concepts take advantage of ...” could it be re-phrased?

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p 4102 line 15: what is considered as reasonable accuracy? line 26: please change "... other available in real time proxies..." to "other proxies available in real time" 2.Model description p 4103 line 15 "..we use also the modified.." line 23 "It takes also into account.." line 25 "Other ion clusters included are .." 3.Regression analysis

p. 4104 lines 14-25, and all of the second paragraph:

"..between of the observed with SUSIM and SOLSTICE solar spectral UV irradiance.."please re-phrase so that the meaning is clear.

What does the acronym ROB mean?

What is the time consistency between proxies from different experiments? Please add a sentence to clarify this

How are the correlation coefficients smoothed?

p 4105, lines 18-19: How is the combination of the two proxies constructed? It would be better if the combined proxy is given a different name (e.g.LYRA-P), because it may cause confusion.

line 27: "using the proxies described above.." 4. Accuracy evaluation

p 4107: please correct SOLTICE to SOLSTICE, also in pages below

p. 4108 lines 7-9: what is the meaning of "..the variability of the reference.." this sentence is rather unclear lines 21-22 what is the height of the warming in the stratosphere?

p. 4110, lines 2-3: again what is reasonable accuracy? line 4-5, last sentence: How about the correlation with the 6-hourly solar irradiance that will be provided by LYRA?

5. References the references to Rottman et al., 1993 and Rottman et al.,2006 are missing

Figures: The quality of the figures should be improved, as it is rather low. It is very

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difficult to distinguish between the lines.

It would be also helpful if the words "SUSIM" and "SOLSTICE" are added in the text above the left and the right panels, so that the reader is always reminded.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 4099, 2008.

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