Atmos. Meas. Tech. Discuss.,
doi:10.5194/amt-2019-183-SC3, 2019

Atmospheric Measurement Techniques Discussions

Interactive comment on "Channel selection method for hyperspectral atmospheric infrared sounder using AIRS data based on layering" *by* Shujie Chang et al.

Deming Kong

konghku@163.com

Received and published: 20 September 2019

General comments: This work investigates an effective channel selection scheme for a hyperspectral atmospheric infrared sounder using AIRS data based on layering. Findings from the analysis are important for applications. The retrieval results of ICS concerning the near space atmosphere are particularly good. It is a clearly written paper. At the same time, the article can be improved in several ways as below. âĂĺ Technical comments: 1. If the section 2.3 is for methodology, then please add the name to the title of section 2; if not, then move it to the suitable position. 2. There are some grammatical and typographical errors in the manuscript, which I have tried to capture in the

technical comments section. These must be corrected before the manuscript can be published. 414-416: There are a few with extremely large measurement errors, which reduce the accuracy of prediction to some extent. -> Among them, some extremely large measurement errors educe the accuracy of prediction to some extent. 509-513: Therefore, when we select channels, the results differ because of the different observation angles. But due to the selection principle and method are exactly the same and our key is the selection method; we do not discuss, therefore, the variation in observation angle when making a selection. -> The goal of this section is focusing on the selection methods of selecting channels, therefore the biases produced from different observation angles can be ignored. 579: reaching -> and reach to 689-692: "Second, by comparing the results of ICS and NCS we found that below 100 hPa, since the method used in this paper considers near ground to be less of an influencing factor, the channel combination of ICS is slightly inferior to that of NCS, but the difference is small." This sentence is rather awkward, please rewrite. 742-743: the atmospheric profile is from the IFS-137 database introduced in Sect. 4, and divides it into four regions -> this paper divided the atmospheric profile from the IFS-137 database introduced in Sect. 4 into four regions 744-745: These regions' profiles -> The profiles of these regions 798-799: As can be seen from Fig. 13, the temperature standard deviations of the ICS in the four typical regions are large. -> The temperature standard deviations of the ICS in the four typical regions are large (Fig. 13).

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-183, 2019.