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Atmospheric Measurement Techniques Discussions

Interactive comment on "Comparison of the Arctic upper-air temperatures from radiosonde and radio occultation observations" *by* Liang Chang et al.

Y. Liu (Referee)

yinghuil@ssec.wisc.edu

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This manuscript makes an effort to apply radio occultation (RO) temperature profiles in revealing the Arctic temperature variations in the troposphere associated with the sea ice change. For this purpose, the authors compare the performance of RO temperature profiles and radiosonde (RS) temperature profiles in the troposphere from 900 t0 250 hPa. The way to compare RO and RS profile performance using two schemes is plausible. The conclusion of the added value of RO in studying Arctic temperature variation is reasonable.

My specific comments are:

1. line 20 on page 1, this sentence is confusing by just reading the abstract, the authors need revise this by pointing out what details the RO can provide. 2. Line 29 on page 1,

it is arguable that radiosonde has poor temporal resolution. 3. Line 21 on page 2, this sentence is confusing, need revision. 4. Line 25 on page 2, after "furthermore" needs revision 5. line 7 on page 4, same as 2 6. line 30 on page 4, I suggest the authors delete sentences as "...agree well...", instead, just providing the detailed statistics here and other places in this manuscript 7. Line 12 on page 5, I found this sentence is not clear. 8. Line 16 on page 5, I do not see where the authors describe this in section II. 9. Line 19 on page 5, this sentence is not true IMO. 10. Line 24 on page 5, what is RAOBCORE and RICH? 11. Line 14 page 6, table I. 12. Line 23 on page 6, what is ROI? 13 Line 2 on page 7, you might want rewrite this sentence. 14. Line 5-10 on page 7, can you define how the anomalies are calculated? 15 Line 10 -25, I suggest the authors add a table to show the values of the anomalies at those RS stations and correspondent grid. Also, provide statistical details. 16, Line 23 on page 8, should be autumn 2007. 17, line 29 on page 8, same as 16. 18 Line 18-19 one page 9, this sentence is confusing. 19 Line 10 on page 10, this sentence is confusing 20 Line 27 on page 10, considering replacing "surface atmosphere" 21 Figure 7 and 8, the black dots appear in grey color.

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