

Interactive comment on “Evaluation of the warming structure in the Arctic” by C. E. Chung et al.

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Received and published: 17 October 2013

The main content of Chung et al paper “Evaluation of the warming structure in the Arctic” is the investigation of possibility to use results of different reanalysis for study of recent climate changes in the Arctic low atmosphere. After comprehensive analysis authors come to conclusion that all four reanalyses agree better with each other at the locations of radiosounding stations than for the whole Arctic region. Other, and may be the most important conclusion in the paper, is that studies of the Arctic climate based on reanalyses “should be taken with extreme caution”. Based on both of these conclusions it could be recommended to change title of the article to something as “About possibility to use reanalysis to evaluate warming structure in the Arctic”. It needs to

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note, that the restriction of comparison between reanalyses only with air temperature data does not allow make any conclusions about reasons of difference between information, contained at each of reanalyses. Few years ago we published the results of comparison of NCEP data with data of Russian drifting stations (Makshtas et al, 2007: Atmospheric forcing validation for modeling the central Arctic. Geophysical Research Letters, vol. 34, L20706, doi: 10.1029/2007 GL031378) where we had shown that at least this reanalysis data are totally wrong in describing cloudiness, one of the main player in SAT temperature formation, and SAT during summer. I think it could sense in future to use the data of SHEBA and Russian drifting stations for analyses like executed in the reviewed paper, for the Central Arctic. Nevertheless, the quality of air temperature data analysis, executed in the paper, is excellent. It is the reason to recommend paper for publication.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 21927, 2013.