Biogeosciences

Discussions

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Interactive comment on "The contribution of land-use change versus climate variability to the 1940s CO$_2$ plateau: Former Soviet Union as a test case" *by* Ana Bastos et al.

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Dear Autors,

Thank you very much for very detailed explanations.

Please find my few additional comments below.

RC1: thank you. I think you are right.

RC2: I do not think there is a problem here, thanks. Only the data I would like to show - please, see the figure in the attachment. That is time series of spatially averaged anomalies of mean annual temperature at the earth's surface for Russia (top) and the

globe (bottom). Axis: horizontal - years, vertical - deviations from the mean during 1961-1990 (Celsius). Red shows the course of the 11-year average. That is a bit different from the curve for the Northern Hemisphere on your figure. So as for me I do not see for 1940s extra positive anomalies in Russia. Maybe it is even opposite - there is a strong negative anomaly in 1941.

RC3: thank you for the detailed explanation. That issue resolved.

RC4, RC5: In my personal view it is crucial. It is clear underestimation in your results. Unfortunately, I am not historican, and cannot help to find robust datasets for disturbances of ecosystems during the war. There are few data - for example, there are data on the number of burned villages (for example for Belarus it is about 9200 villages). Probable it is possible to find more indirect data in the Arhive of the Russian Federation, Ukraine, Belarus. Another way could be to obtain "expert opinion" - to find historican for that period. I do not think that just adding the discussion on the underestimation in the paper would be enough. We do not know the scale of that underestimation. In my view that could be very high and the results could be potentially misleading.

RC6: that the second point which is crucial. You have mention that ORCHIDEE model was verified and gave uncorrect results. And you assume that ORCHIDEE-MICT is now estimate correctly (?) I believe that the standart way of performing any modeling - is a verification against experimental data and assessing of the uncertainty of modelling in the beginning.

RC7: I tend to agree with you. Anyway some level of assumption and approximation should be applied. Thank you.

RC8: connected to RC4. Thank you.

Thank you very much again! Maybe it would be good to see opinions of another referees and editors.

BGD

Interactive
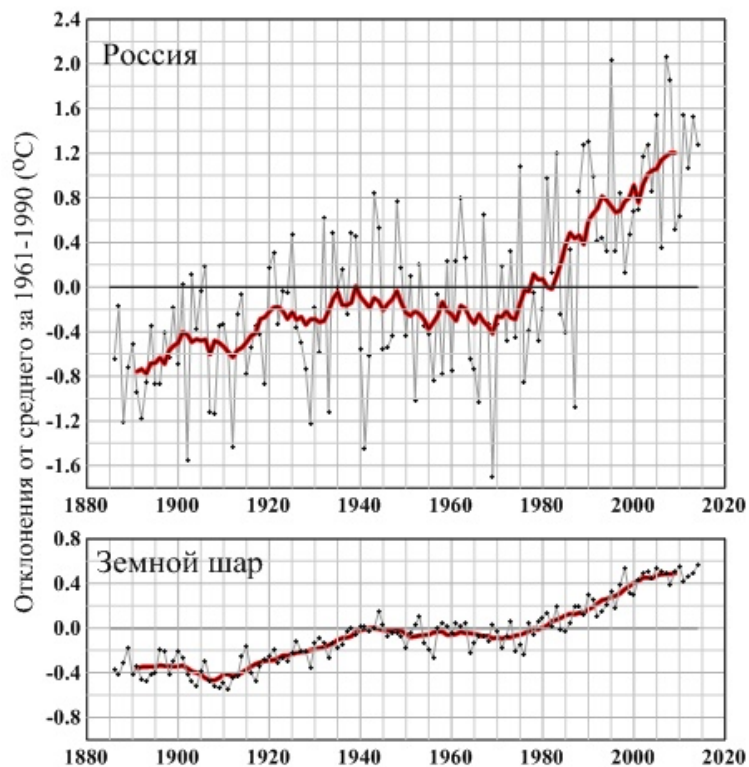comment

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Discussion paper

Fig. 1.

Временные ряды пространственно осредненных аномалий средней годовой температуры у поверхности Земли для территории России* и Земного шара** за 1886-2014 гг. Красным показан ход 11-летних средних

В среднем по территории России самым теплым был 2007 год, за ним следуют 1995 и 2008 гг.

Для Земного шара в целом самыми теплыми были: 2014, 2010, 2005 и 1998 гг.

* Данные "ФГБУ Институт глобального климата и экологии Росгидромета и РАН"

** Данные метеослужбы Великобритании HadCRUT4.3.0.0 (http://www.cru.uea.ac.uk)