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Estimation of soil humidity anomalies influence on summer precipitation anomalies for Western Siberia

Y. Martynova (1,2) and V. Krupchatnikov (1,2)

(1) Siberian Regional Research Hydrometeorological Institute, Novosibirsk, Russia (FoxyJ13@gmail.com, vkrup@ommfao1.sscc.ru), (2) Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia (FoxyJ13@gmail.com, vkrup@ommfao1.sscc.ru)

A study of influence degree of soil humidity anomalies on summer precipitation anomalies against the background of 2 concentration increase is presented. The study is based on method described in [1]. A global model of intermediate complexity “Planet Simulator” [2] was used in this study. Two scenarios were taken into account: “Control scenario”, with constant 2 concentration at 360 ppm, and standard IPCC scenario A2. For each scenario 10 model runs with different soil humidity perturbations were performed for 90 model years.

The analysis of the results showed that for convective precipitations the influence degree of soil humidity for the A2 scenario is less than for “Control scenario”. At the same time for the large scale precipitations an increase of the influence degree of soil humidity was discovered. This study could be useful not only for understanding of the process physics but also for long-term precipitations forecasts.

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