

GC31B-0454 On-Going Temperature Extremes in Siberia

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Ongoing global climate changes accompanied by the restructuring of global processes in the atmosphere and biosphere are strongly pronounced in the Northern Eurasia regions, especially in Siberia. Temperature trends (grows up to 0.5 °C per decade), more frequent occurrence of temperature extremes provoked serious natural disasters (2010 heat waves in Russia, 2013 flood in Russia's Far East) led to socio-economical impact (crop damages, infrastructure failures, respectively). To get reliable knowledge on location, frequency and magnitude of observed extremes we have studied daily max/min temperature trends based on ECMWF ERA Interim Reanalysis data (0,25°×0,25°). This dataset is most accurately reproduces observed temperature behavior in the region.

Statistical analysis of daily temperature time series (1979-2012) indicates the asymmetric changes in distribution tails of such extreme indices as warm/cold days/nights. Namely, the warming during winter cold nights is stronger than during warm nights, especially over the north of Siberia. Increases in minimum temperatures are more significant than in maximum temperatures. Warming determined at the high latitudes of the region is achieved mostly due to winter temperature changes. South area of Siberia has slightly cooling during winter and summer. Results obtained provide regional decision-makers with detailed high spatial and temporal resolution climatic information required for adaptation and mitigation measures development. Calculations presented have been realized using information-computational web-GIS system "Climate" (<http://climate.scert.ru/>) which automatically generates the archive of calculated fields ready for multidisciplinary studies of regional climate change impacts.

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