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Russian heat wave of 2010 in the context of hot summer events over the last century

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In July- August 2010 considerable part of European and Siberian Russia experienced extremely high positive surface temperature anomaly exceeding 6 degrees. Extremely hot period lasted for more than 40 days and resulted in disastrous fires which critically affected economy and life conditions in European Russia. This anomalous situation resulted from the long-term blocking of the midlatitudinal jet flow and was associated also with the disastrous precipitation and flooding over Eastern Europe (west of European Russia) and in Pakistan (southeast of European Russia). We analyse the nature of the phenomenon by looking on similar events over European Russia during the 20th century. For exclusively positive anomalies of surface temperature identified using UEA data set as well reanalyses we performed EOF analysis of associated SLP and SST patterns over the Northern Hemisphere. Analysis was performed for SLP patterns corresponding to the temperature anomalies over European Russia exceeding different magnitudes (from 0.5 to 3 standard deviations). Although the associated circulation modes do not unconditionally imply that the 2010 summer anomaly was associated with the unusual conditions over the Atlantic-European sector, this anomaly showed association with the strong SLP anomaly in the Aleutian low, that was not the case for most hot summers in the record.