



Changes in duration and intensity of the wet spells of different intensity over Northern Eurasia and North America

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(1) According to the 20th Century Reanalysis data, there is a general century-long increase in an intensity and frequency of extratropical cyclones over the northern extratropics and an increase in their average duration, i.e. lengthening of the mean lifespan of storms. These conclusions however, have notable regional and seasonal differences (i.e. there are regions and seasons where opposite statements are true). Furthermore, all these conclusions are trustworthy only for the regions with reliable long-term synoptic information (large Europe, Northern Atlantic, the central parts of the North American continent and Northern Eurasia (Wang et al. 2012, manuscript in preparation).

(2) There are indications that in the post World War II period over Europe the frequency and duration of the wet spells have changed and the occurrence of the prolonged wet spells have increased (Zolina et al. 2010).

(3) At the same period over most of North America and Northern Eurasia, an increase of intense precipitation including the multi-day events was documented (Groisman et al. 2005, 2012; USCCSP 2009).

Having the above as a rationale for further research, we (a) expanded the initial wet spells study into the northern extratropics and (b) estimated the frequency and duration of the wet spells of different intensity (e.g., by looking for the wet spells constructed from the days with intense precipitation only).

The results of temporal changes (time series and trends) and distribution (mean values and the upper percentiles) of frequency, duration, and intensity of these wet spells will be presented at the Session for the regions of North America, Europe, and Northern Asia that are well covered by the dense networks of long-term daily and sub-daily precipitation observations.

References:

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