Climatic Changes over the Republic of Belarus during the Period of Instrumental Observations

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Part 1. Introduction

The Republic of Belarus is located in the geographical center of Europe, in eastern Poland, Lithuania, Latvia, Ukraine, and the Russian Federation.

Part 2. Data issues

The climate in the Belarus

Deviation of average monthly surface air temperature during 1989-2008 from long-term mean values

Part 3. Results

Results

Differences between mean values of meteorological variables

Summary

Geographically, strongest warming was observed in the northern and eastern parts of the nation. Major changes occurred in winter and spring (+1.8°C and +1.3°C respectively) while the summer warming was moderate (+0.5°C) and in autumn was absent. Month with the highest temperature change was January (+3.3°C) and with the lowest temperature change was November (+0.1°C).

- A significant (up to 1 m/s) increase in the near surface wind speed across the nation in all seasons, this is a 13% to 20% decrease.
- A visible increase in the surface air absolute humidity while the relative humidity remains mostly unchanged.
- A weak increase by 0.5% of the monthly annual precipitation, same pattern increase in March, April, and May.
- A significant increase in surface air temperatures with the largest changes (up to 3.5°C) in the cold season. Nationwide annual surface air temperature has increased by 0.7°C.

Basic data information

Warning for users...

- Precedings of the Belarus daily meteorological observations (54 stations) were used as an opportunity to assess the recent climatic changes over the nation.
- Climatic changes in Belarus are compared with those changes around the earth. A tendency of warming is observed during the period of instrumental observations, especially in the cold season.
- Since the last decade of the 20th century, the longest period of positive temperature anomalies has been observed in Belarus compared to the last almost 350 years of instrumental observations.
- National climatological normals are associated with the observed increase in the number of the extreme climate phenomena (droughts, heat spells, warm winters).
- Comparison of the latest period (since 1990) with the previous three decades over Belarus shows:
  - A significant increase in surface air temperatures with the largest changes (up to 3.5°C) in the cold season.
  - Nationwide annual surface air temperature has increased by 0.7°C.

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