



How has the Northern Hemisphere circulation changed during the 20th century?

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Even the atmospheric circulation is affected by the ongoing climate change. The newly available 20th Century reanalysis V2 provides an opportunity to better understand how the Northern Hemisphere circulation looked like since the 1870's and how it changed during that time. We describe atmospheric circulation by the modes of low-frequency variability (i.e. teleconnections). They are identified by the varimax-rotated principal component analysis of 500 hPa heights, for each climatological season separately. We hypothesize that the leading modes of the early 20th century are statistically different from the modes in the last 40 years.

The circulation patterns vary even between different reanalyses due to various resolution, data assimilation processes or model settings. Therefore the comparison with other data sources is needed. We employ the commonly used ERA-40 reanalysis for the 1957 -2002 period. Slight differences arise in the position and intensity of modes.