



Winter precipitation in Poland during western circulation in relation to water vapor transport

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A long-term winter precipitation variability in Europe indicated an increase in precipitation totals. For this season the western atmospheric circulation plays a vital role in the formation of precipitation conditions over Poland. In the recent years during wintertime the western circulation appears more frequent over Polish area. The most pronounced increase was found for the anticyclonic circulation. More frequent western anticyclonic circulation occurrence provides changes in cyclone trajectories over the North Europe. The Atlantic Ocean is the principal source of water vapor which affects clouds and precipitation formation. An increase in precipitation during the western circulation is associated with a positive tendency of surface temperature and water vapor flux over the source areas of air masses. The changes in the amount of water vapor, which is transported throughout Europe directly affects precipitation abundance in Poland.