Geophysical Research Abstracts
Vol. 12, EGU2010-6743, 2010
EGU General Assembly 2010

Changes in pan and visible evaporation over European Russia

Nina Speranskaya
State Hydrological Institute, Agrophysical laboratory, St. Petersburg, Russian Federation (speran@mail.rcom.ru)

Pan evaporation observations in the USSR began in the middle of 1950s. At the peak of the network extent (in the middle of 1980s) more than 150 stations performing these observations operated over European Russia. From 1990s the number of stations was significantly reduced, and at present data up to 2008 are available only for 25 stations, and up to 1999 - for 15 stations. On the basis of all available data (for 98 stations) the territory of European Russia was zoned according to the character of total pan evaporation changes during the warm period (May-September). Over the territory, 12 regions were selected in which trends and interannual variability of pan evaporation at stations were similar.

Visible evaporation changes are estimated for each of selected regions from 1966 to 2008. Its value is determined by difference between pan evaporation and precipitation for the same period. Visible evaporation is an indirect index of losses of energy resources on evaporation. A positive value of visible evaporation is evidence that territory moistening is insufficient, and evaporation exceeds precipitation (so-called "dry" conditions are observed). In the case when precipitation predominates above evaporation, visible evaporation is of negative value ("humid" conditions). The greater the negative value of visible evaporation means that more territory is moistened, and more water is involved into the water exchange.

Precipitation changes for all selected regions were analyzed on the basis of data from the archive created at the RIHMI—WDC that contains data from 780 stations at the European Russia territory for 1966-2008. Analysis of visible evaporation changes during the past 40 years shows that moistening increasing is observed practically over the whole territory of European Russia.