Geophysical Research Abstracts
Vol. 19, EGU2017-3131, 2017
EGU General Assembly 2017
© Author(s) 2017. CC Attribution 3.0 License.

Effect of thermic climate continentality on selected characteristics of snow cover in Slovakia in the period 1981/82 - 2010/11

Cyril Siman
Slovakia (siman@uh.savba.sk)

In the study, the impact of climate continentality on selected characteristics of snow cover in Slovakia in the period 1981/82 – 2010/11 was monitored. Data of the daily average temperature and height of the snow cover was provided by the Slovak Hydrometeorological Institute. The thermal climate continentality was evaluated by the Gorczyński Index of Continentality. On the basis of the characteristics of the snow cover, its duration and height was evaluated for the winter season (November to April). To find a relationship between the selected characteristics of the snow cover and climate continentality, regression analysis was used to reach the Pearson correlation coefficient and the coefficient of determination. The Gorczyński index of continentality was used for the analysis. The evaluated stations were selected according to their locations and altitudes, but the relationship between the characteristics of the snow cover and climate continentality was evaluated only at of stations with an altitude lower than 700 meters a. s. l. The climate continentality in the lowlands of Slovakia has the greatest influence on the number of days with snow cover higher than 1 cm. The higher the climate continentality, the greater the number of days with snow cover. With increased climate continentality, the average number of days with snow cover higher than 1 cm increased as well, but the average height of snow cover decreased. The basins of Slovakia, was a major reduction of the snow cover with increased climate continentality observed. Not only does climate continentality, but also the altitude and relative position to the flow impacts the snow cover in Slovakia.