

Temperature alterations on the Antarctic ice sheet initiated by the disturbed solar wind

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The temperature observations proceeding by the automatic weather stations (AWS) at Dome C II and South Pole (Clean Air) and by automatic meteorological station MILOS at Vostok provided the basis of the analysis. The hourly values of the temperature deviations (ΔT) have been derived from these measurements for winter season (May-September) of 2000-2001. These values were compared with the hourly solar wind characteristics, such as interplanetary electric field and the solar wind dynamic pressure, the time of the maximum deviation in a proper solar wind parameter has been determined as a key moment. Results of our analysis confirm the conclusion of *Troshichev et al. [2003]*, that large increases the interplanetary dawn-dusk electric field influence the warming effect on the ground level in the Central Antarctica. However, extent of the solar wind influence on the atmospheric temperature turned out to be highly different at various sites of the ice sheet: while the temperature response at Dome C II is like to Vostok station, the only slight tendency is displayed at South Pole. The conclusion is made that difference in the temperature effects at Vostok and Dome C II, on the one hand, and South Pole, on the other hand, is determined by different disposition of stations within the katabatic system of circulation. As the pattern of near-surface katabatic winds [*Parish and Bromwich, 1987*] shows, the both stations, Vostok and Dome C II, are situated in zone of Central Antarctic ridge, where the drainage winds take origin. On contrary, South Pole is out of the Antarctic ridge, in area of the developed drainage winds. It is suggested that the interplanetary electric field influences the katabatic system of atmospheric circulation, typical of the winter Antarctic, by means the global electric circuit.