

The aim of this paper is to analyse land surface temperature (LST) derived from satellite data in the area of the Czech Republic in 2008. Satellite data are used from MSG-2 (Meteosat Second Generation), Modis (Moderate Resolution Imaging Spectroradiometer) and data from ground climatological stations at Byškov, Husinec and Chrástov in the south of the Czech Republic. This paper deals with questions of deriving LST and it describes methods, which are used by its derivation. Methods of derivation of LST from the satellite data used are described in more detail. LST is compared to ground temperatures (5 cm and 2 m above surface). The character of ground and satellite temperature is different because the value of LST refers to the area about spatial resolution of the satellite sensor, while the ground station's temperatures are in-situ. Curves of diurnal progress temperatures are created from the gained data for days with minimal cloud coverage. The results show that diurnal curves of surface temperature are more similar to diurnal curves of air temperature at 2 m than at 5 cm. Data from LST from selected satellites were compared to each other. The differences were smaller during night hours.