

Abstract

Patterned ground is a geomorphological phenomenon, which is connected with climate progression development. In the Czech Republic, there are these varieties of patterned grounds (Tremel, Křížek, Engel, 2005): sorted nets, circles, stripes, peat hummocks and non-sorted stripes. Sorted circles are still active. This paper evaluates localities of occurrence of active sorted circles from the side of temperature, snow and pedological conditions and clast movement which can occur at these localities as well. Pieces of knowledge of conditions and process of frost sorting were applied to the laboratory environment and the process of starting development in this time active sorted patterned grounds - sorted circles was simulated there.

It was found out, that regelation cycles occur most often at Modré Sedlo where so far 40 regelation cycles was registered during the research. Ground temperature is distinctly influenced by potency of snow cover; at Modré Sedlo this potency is for whole winter season maximally 7 cm above active sorted circles. Horizontal movements of clasts of 5,13 mm in average and contraction of angles hold by clasts and a surface of 15° in average were registered at terrain localities.

Whirling in the top layer of substratum (2 cm) caused by clast frost heaving, perishing of clast to surface, horizontal position changes (2,6 mm in average) and changes of angle hold with surface was registered during laboratory simulations (16,9° on surface and 8,9° in dept of 1 cm under surface). Gravel with inhomogeneous size of clasts was evaluated as the best substratum for frost sorting. Needle ice and arching of substratum centre can occur already after first regelation cycle.