



Air and ground temperatures along elevation and continentality gradients in Southern Norway

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The modern southern boundary for Scandinavian permafrost is located in the mountains of Southern Norway. Permafrost and seasonal frost are considered key components of the cryosphere, and the climate-permafrost relation has acquired added importance with the increasing awareness and concern of rising air temperatures. The three-year research project CRYOLINK (“Permafrost and seasonal frost in southern Norway”) aims at improving knowledge on past and present ground temperatures, seasonal frost, and distribution of mountain permafrost in Southern Norway by addressing the fundamental problem of heat transfer between the atmosphere and the ground surface. Hence, several shallow boreholes have been drilled, and a monitoring program to measure air and ground temperatures was started August 2008. The borehole areas (Juvvass, Jetta and Tron) are situated along a west-east transect and, hence, a continentality gradient, and each area provides boreholes at different elevations. Here we present the first year of air and ground temperatures from these sites and discuss the influence of air temperature and ground surface characteristics (snow conditions, sediments/bedrock, vegetation) on ground temperatures.