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Longterm monitoring of thermal and hydraulic dynamics of a permafrost site near Ny-Ålesund, Svalbard

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Abstract | The dynamics of permafrost soils is manifest in soil temperature which can be measured with high accuracy and temporal resolution. We present a longterm monitoring of ground temperature and soil moisture content using largely continuous data over a period of eight years between 1998 and 2006 from a mineral hummock field at the Bayelva site, Svalbard. Moreover, we show a successful projection of surface temperatures to greater depths in a 1D-profile with constant parameters. Analyzing the soil temperature data we perceive an apparently missing winter 2005/06.