Data description sheet for CH2014-Impacts, Chapter 5: Snow, ice, and ski tourism: permafrost

Variable

Name	Ground temperature difference to reference run
Units	K
Description	This data represents the mean annual ground temperature difference to a reference run at the end of the century at 5m depth after the application of **seasonsal** (autumn) climatic change on air temperature and precipitation.

Climate data input

Data set
Multiple pairs of air temperature and precipitation change (delta change) values covering most of the CH2011 DAILY-LOCAL scenario range.

CH2011 scenario cube coverage
time period: 2035, 2060, 2085
GHG scenario and climate uncertainty: scenario range mostly covered by temperature and precipitation changes considered.

Reference period
1980-2009 (standard)

Climate variables considered
Temperature and Precipitation

Domain

spatial

coverage/resolution	Schilthorn reference site Point level, at the borehole site.

time

coverage/ resolution	year 2085, annual mean

Impact Model

Name	COUP model (Jansson, 2012)
Description	Coupled heat and mass transfer ground model.

Impact uncertainty coverage

Uncertainty provided	no

Data structure

First column delta precipitation (%) and first row is delta temperature (K).

How to cite

Marmy A, Salzmann N, Scherler M, Hauck C (2013) Permafrost model sensitivity to seasonal climatic changes and extreme events in mountainous regions, Environ. Res. Lett. 8 035048.

Jansson, P. E. (2012). CoupModel: model use, calibration, and validation. Transactions of the ASABE 55: 1335–1344.

Various information

Data obtained after a calibration based on a 20-years borehole data set and after a 30 years spin up.