Firn core dataset

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Files organization

CoreList.csv

Contains all the metadata regarding each core.

Table 1. Field description for the file CoreList.csv

Field	Description
CoreNo	Identifier of the firn core in the present dataset. Also designates the file containing the density/stratigraphy data in the "cores" folder. Data from CoreNo 171 can be found under "cores/171.csv".
Name	Name of the firn core in the original dataset. In SUMup this information was lost (f.e. names of cores in the dataset from Benson).
NearestCodeLocation	Tags of the closest study site or weather station location.
DateCored	Core drilling date. When not reported 1st of July was used instead.
Northing_decdeg	Latitude
Westing_decdeg	Longitude
Elevation_masl	Elevation
DensityAvailable	Is density available (1=yes 0=no)
StratigraphyAvailable	Is stratigraphy available (1=yes 0=no)
MaxDepthm	Maximum depth reached by the core (in meter)
Citation	Reference of the study that first presented the core

Folder "cores"

Where all the density and stratigraphy data are located. Files are named after each core's number as defined by the field "CoreNo" in CoreList.csv. Each file contains 4 columns: Depth (cm); Density (kg m-3); Type (-); Ice content (%). -999 is used when no value is available. All cores have been down-sampled at a centimetre resolution. If density is known for a core section, all the centimetres that compose that section receive the section's density. "Type" field is the mention that was reported by the observer for that depth range. Table 2 give the list of possible mentions in the original datasets and how they were harmonized in ours.

Table 2. Stratigraphic units as found in the original datasets and how they were harmonized into the presented dataset.

Appellation in original datasets	Appellation in this firn core dataset
Depth hoar	
Wetted facets	Depth hoar
Faceted crystals	

Low density depth hoar	
Coarse depth hoar	
Coarse snow	
Wet snow	Wet snow
Fresh snow	
Fresh, soft snow	Fresh snow
Soft snow	
Hard snow	
Snow, wind blown	
Windpressed, hard snow	Windblown snow
Windblown,snow	
Snow, windblown	
Hard snow	
Snow	Snow
Dry snow	
Dry fin	
Unwetted firn	Unwetted firn
Thin firn	
Firn	Firn
Very coarse firn	
Wet firn	
Wetted firn	
Coarse grained	Wetted firn
Coarse firn	
Percolated firn	
Saturated firn	
Porous ice	
Ice lens	
Ice	
Ice layer	Ice
Crust	
Thin crust	
Ice crust	

Dataset overview

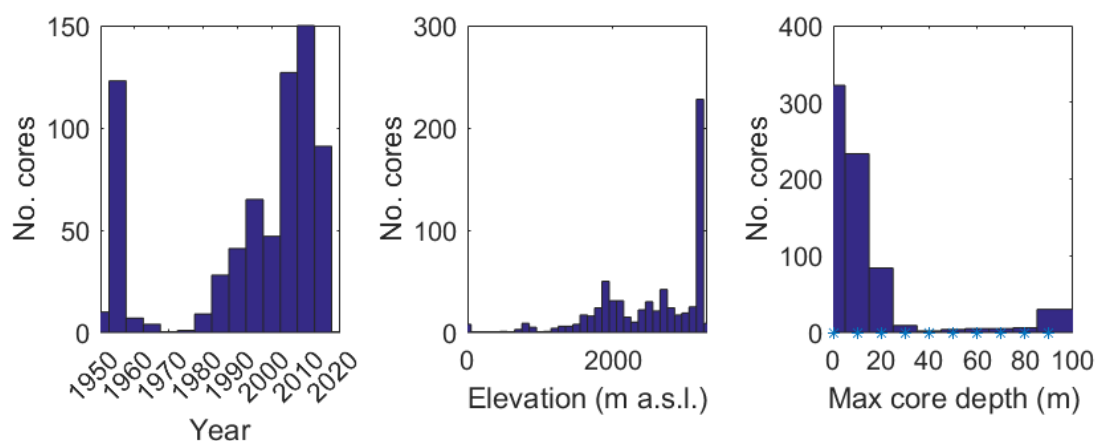703 measurements, of which 695 have density profiles and 137 have stratigraphy.

Figure 1. Temporal, elevation and depth distribution of the firn core dataset.