

SnowEx23 Apr23 IOP Snow Pit Measurements, Version 1 Technical Reference

1 INTRODUCTION

1.1 Data Set Overview

This data set contains snow pit data collected from 13 snow pits excavated during the NASA SnowEx23 field campaign near Fairbanks, Alaska. The snow pits were located across three field sites: the Caribou/Poker Creek Research Watershed, Farmer's Loop/Creamers Field, and Delta Junction. The data was collected during April 2023 concurrent with the data published as [SnowEx23 Apr23 IOP Snow Surface Imagery, Version 1](#), and coincident with hyperspectral measurements from NEON towers, drone, NASA's AVIRIS-NG instrument aboard an aerial platform, and other satellite-based hyperspectral measurements. Snow pit measurements were collected adjacent to spectrometer transects established throughout boreal forests, burned forests, and open meadows, with the goal of supporting features of snow spectra such as snow microstructure and water and ice content. Snow pit data was collected, processed, and formatted in accordance with [standard NASA SnowEx methodology](#) featured in other [SnowEx 2023 snow pit datasets](#).

1.2 File Information

1.2.1 Format

The data are available in 15 multifile granules compressed into .tgz files. Thirteen of the granules comprise the primary data files; each granule represents a single snow pit and contains seven data files formatted as comma-separated value files (.csv). One granule contains seven graphs formatted as image files (both .png and .jpg). The remaining granule contains two summary files, formatted as comma-separated value files (.csv).

1.2.2 Naming Convention

The granules containing the primary data files are named according to the following convention:

```
SNEX23_APR_SP_[SITE]_[PIT_ID]_[YYYYMMDD]_v01.0.tgz,
```

where SNEX23_APR_SP is the data set short name, SITE is the name of the field site, PIT_ID is the snow pit identification number, and YYYYMMDD is the date of data collection.

The data files within the granules follow the same naming convention but are appended with the data parameter as such:

```
SNEX23_APR_SP_[SITE]_[PIT_ID]_[YYMMDD]_[PARAMETER].v01.0.csv.
```

The granule containing the summary files follows a similar naming convention, and is named:

```
SNEX23_APR_SP_Summaries_20230401-20230418_v01.0.
```

The granule containing the image files follows a similar naming convention, and is named:

```
SNEX23_APR_SP_QC_Figures_20230401-20230418_v01.0.
```

1.3 Spatial Information

1.3.1 Coverage

Northernmost Latitude: 65.16124° N

Southernmost Latitude: 63.8631° N

Easternmost Longitude: 145.72673° W

Westernmost Longitude: 147.72499° W

1.3.2 Geolocation

This data set conforms to the WGS 84 coordinate reference system ([EPSG 4326](#)).

1.4 Temporal Information

1.4.1 Coverage and Resolution

1 April 2023 to 18 April 2023

2 ACKNOWLEDGEMENTS

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