

SnowEx23 Airborne SWESARR Backscatter Intensity Raw, Version 1 Technical Reference

1 INTRODUCTION

1.1 Data Set Overview

This data set contains raw airborne microwave observations from the Goddard Space Flight Center SWESARR (Snow Water Equivalent Synthetic Aperture Radar and Radiometer) instrument collected during the SnowEx 2023 field campaign in Alaska. Data collection occurred over 10 microsecond intervals along a ~3 minute flight line using three frequencies (9.65, 13, and 17 GHz) in two polarization modes (VV and VH). All of the data files were acquired over a 7-day flight campaign in March 2023 and a 10-day flight campaign in October 2023. Available data include measured complex backscatter in in-phase and quadrature binary format, along with supporting metadata.

1.2 File Information

1.2.1 Format

These data are provided in 18 multi-file granules formatted as compressed .tgz files, each containing data files available in .dat format.

1.2.2 Naming Convention

Each granule conforms to either of the following naming conventions

SNEX23_SWESARR_Raw_[FLIGHT_NN]_[YYYYMMDD]_v01.tgz, or
SNEX23_SWESARR_Raw_[FLIGHT_NN]_[YYYYMMDD-YYYYMMDD]_v01.tgz,

where SNEX23_SWESARR_Raw refers to the NASA SnowEx 2023 field campaign raw SWESARR data, FLIGHT_NN refers to the flight identifier, and YYYYMM [-YYYYMMDD] represents the date range of the included data.

1.3 Spatial Information

1.3.1 Coverage

Northernmost Latitude: 70.2° N

Southernmost Latitude: 64.6° N

Easternmost Longitude: 149.8° W

Westernmost Longitude: 147.1° 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

28 February 2023 to 16 March 2023

10 October 2023 to 25 October 2023