SnowEx20 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 2020 field campaign at Grand Mesa, Colorado. Data collection occurred over 10 microsecond intervals along a ~5 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 3-day flight campaign in November 2019 and a 3-day flight campaign in February 2020. 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 the following naming convention

`SNEX20_SWESARR_Raw_[PARAMETER]_[YYYYMM]_v01.tgz,`

where `SNEX20_SWESARR_Raw` refers to the NASA SnowEx 2020 field campaign raw SWESARR data, `PARAMETER` refers to the file contents, and `YYYYMM` represents the data collection period, and `v01.0` represents Version 1.

Available `PARAMETER` types include `AUX` (auxiliary data), `FLIGHT_N` (flight data and flight ID number), `GROUND` (ground data), and `Products`.

1.3 Spatial Information

1.3.1 Coverage

Northernmost Latitude: 39.085° N

Southernmost Latitude: 38.978° N

Easternmost Longitude: 108.097° W

Westernmost Longitude: 108.241° 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

04 November 2019 to 06 November 2019

10 February 2020 to 12 February 2020