



SMAPVEX08 In Situ Vegetation Data, Version 1

USER GUIDE

How to Cite These Data

As a condition of using these data, you must include a citation:

McKee, L., M. Cosh, and T. Jackson. 2015. *SMAPVEX08 In Situ Vegetation Data, Version 1*. [Indicate subset used]. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. <https://doi.org/10.5067/US4X5QPYH6DB>. [Date Accessed].

FOR QUESTIONS ABOUT THESE DATA, CONTACT NSIDC@NSIDC.ORG

FOR CURRENT INFORMATION, VISIT <https://nsidc.org/data/SV08V>



National Snow and Ice Data Center

TABLE OF CONTENTS

1	DETAILED DATA DESCRIPTION	2
1.1	Format	2
1.2	File and Directory Structure	2
1.3	File Naming Convention.....	2
1.4	File Size	2
1.5	Spatial Coverage	3
1.5.1	Spatial Resolution.....	3
1.5.2	Projection and Grid Description	3
1.6	Temporal Coverage and Resolution	3
1.7	Parameter or Variable.....	3
1.7.1	Parameter Ranges	3
2	SOFTWARE AND TOOLS.....	4
3	DATA ACQUISITION AND PROCESSING	4
3.1.1	Errors Sources.....	4
4	VERSION HISTORY	4
5	CONTACTS AND ACKNOWLEDGMENTS.....	4
6	DOCUMENT INFORMATION.....	5
6.1	Publication Date.....	5
6.2	Date Last Updated	5

1 DETAILED DATA DESCRIPTION

This data set includes in situ vegetation data collected during the Soil Moisture Active Passive Validation Experiment 2008 (SMAPVEX08) campaign. Sampling was designed to coincide with satellite overpasses, such as Landsat's Thematic Mapper (TM) 5 and the Moderate Resolution Imaging Spectroradiometer (MODIS) sensor on NASA's Terra satellite (MODIS/Terra), which can be then used to estimate vegetation water content on the regional scale.

1.1 Format

The following table provides descriptions for each column in the data file, Sum_VEG_SMAPVEX.xls. An associated Extensible Markup Language (XML) metadata file is also provided.

Table 1. Data Column Descriptions

Column Heading	Description
Field	Site Location
Crop	SB: Soybean
Plant Part	NA, Stalk, Ears, Leaves
Date	2-Digit Month/1-Digit Day/4-Digit Year
Average Field VWC	Average Field Vegetation Water Content (Kg/m ²)
Average Field LAI	Average Leaf Area Index
Average Field Latitude	Decimal Degree, WGS84
Average Field Longitude	Decimal Degree, WGS84
Notes	Sampling notes, if any

1.2 File and Directory Structure

Data files are available at: https://n5e1l01u.ecs.nsidc.org/SAN/SMAP_VAL/SV08V.001/

1.3 File Naming Convention

The data file is named SV08V_Sum_VEG_SMAPVEX.xls.

1.4 File Size

The data file is approximately 22 MB.

1.5 Spatial Coverage

Southernmost Latitude: 38.95°N

Northernmost Latitude: 39.02°N

Westernmost Longitude: 76.09°W

Easternmost Longitude: 75.94°W

1.5.1 Spatial Resolution

The spatial resolution for this data set is 800 m.

To observe parameters at resolutions similar to SMAP footprints, data were acquired at relatively coarse resolutions. At such scales, satellite footprints are unlikely homogeneous, so individual fields were not correlated to footprints. Thus, soil moisture has been characterized for all fields within an area or block large enough to include several aircraft footprints. Each block included ten or more fields. Each field was sampled to provide statistically meaningful field average soil moisture. The groups of fields were then scaled up to various footprint and locations. For more details, see the SMAPVEX08 Experiment Plan.

1.5.2 Projection and Grid Description

Latitude and longitude are in World Geodetic System (WGS84) coordinates.

1.6 Temporal Coverage and Resolution

Vegetation samples were collected at least once between 08:00 and 17:00 local time from 2 October 2008 through 7 October 2008.

1.7 Parameter or Variable

The parameters in this data set include Vegetation Water Content (VWC) [kg/m²], Leaf Area Index (LAI), and Plant Type.

1.7.1 Parameter Ranges

VWC: 0-10 kg/m². Missing data are represented by NA.

2 SOFTWARE AND TOOLS

No special tools are required to view these data. A spreadsheet program which recognizes tab-delimited text files, such as MS Excel is recommended. A word-processing program or Web browser will display the data.

3 DATA ACQUISITION AND PROCESSING

The goal of vegetation sampling is to generate the vegetation products used to estimate surface soil moisture from passive microwave radiometers. Sampling was designed to coincide with satellite overpasses, such as TM 5 and MODIS/Terra, which can be used to estimate vegetation water content on the regional scale.

Vegetation was collected at most SMAPVEX08 field sites at least once during the field campaign. The poor weather conditions made it impossible to get to all of the field sites. The sampling was conducted between 08:00 and 17:00 local time.

Three locations (plots) in each of the fields were sampled. An effort was made to have these locations coincide with the soil moisture sampling points. Sampling consisted of recording vegetation height, row spacing and plant spacing, and collecting vegetation biomass samples from a .46 m by .46 m square. For more details, see the SMAPVEX08 Experiment Plan.

Samples were manually collected from a .46 m by .46 m square. In the laboratory they were weighed, dried at 60°C for 48 to 96 hours, and then weighed again. This data set provides vegetation water content and LAI only.

3.1.1 Errors Sources

Since all of the data were manually collected, human error is possible.

4 VERSION HISTORY

Version 1 (June 2015)

5 CONTACTS AND ACKNOWLEDGMENTS

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6 DOCUMENT INFORMATION

6.1 Publication Date

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6.2 Date Last Updated

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