# SMEX04 Soil Characteristics Data: Sonora

## Summary

This SMEX04 soil characteristics data set contains data for Sonora, Mexico as part of the 2004 Soil Moisture Experiment (SMEX04). The data were extracted from the Food and Agriculture Organization (FAO) digital soil map of the world. Parameters for this data set are soil texture in terms of percent sand and percent clay, and porosity. The temporal coverage is approximate, as these data are representative of the conditions present in the regional study area during the general timeline of the creation of the 2000 FAO soil map of the world. The total volume of this data set is approximately 110 kilobytes. Data are provided in an ASCII text file and are available via FTP.

The Advanced Microwave Scanning Radiometer - Earth Observing System (AMSR-E) is a mission instrument launched aboard NASA's Aqua satellite on 04 May 2002. AMSR-E validation studies linked to SMEX are designed to evaluate the accuracy of AMSR-E soil moisture data. Specific validation objectives include: assessing and refining soil moisture algorithm performance; verifying soil moisture estimation accuracy; investigating the effects of vegetation, surface temperature, topography, and soil texture on soil moisture accuracy; and determining the regions that are useful for AMSR-E soil moisture measurements.

## Citing These Data:

The following example shows how to cite the use of this data set in a publication. List the principal investigators, year of data set release, data set title, and publisher.

Bindlish, Rajat, and Thomas J. Jackson. 2009. *SMEX04 Soil Characteristics Data: Sonora*. Boulder, Colorado USA: NASA DAAC at the National Snow and Ice Data Center. Digital media.

## Overview Table

| Category | Description |
|---|---|
| Data format ASCII | text |
| Spatial coverage | 29° N  to 33° N, 108° W to 113° W |
| Temporal coverage N/A | |
| File naming convention so_soils.txt | |
| File size 110 | KB |
| Parameter(s) | percent sand, percent clay, porosity |

| | Data are available via FTP. |
|---|---|

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# 1. Contacts and Acknowledgments:

## Investigator(s) Name and Title:

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# 2. Detailed Data Description:

## Format:

Data are contained in a single ASCII text file.

## File Naming Convention:

so_soils.txt

## File Size:

 The ASCII file is 110 KB.

## Spatial Coverage:

Southernmost Latitude: 29.0° N
Northernmost Latitude: 33.0° N

Westernmost Longitude: 113.0° W
Easternmost Longitude: 108.0° W

**Temporal Coverage:**

N/A

**Parameter or Variable:**

The data contains soil characteristics for porosity, percent sand, and percent clay.  Percent sand and percent clay describe soil texture.

The data parameters described in Table 1:

**Table 1.** Description of Data Parameters

| Variable | Description |
|---|---|
| porosity | values are given as mean porosity (0-30 cm depth) |
| percent sand | values are given as percent sand (measured at 0-30 cm depth) |
| percent clay | values are given as percent clay (measured at 0-30 cm depth) |

# 3. Data Access and Tools:

**Data Access:**

Data are available via FTP at
ftp://sidads.colorado.edu/pub/DATASETS/AVDM/data/soil_moisture/SMEX04/Sonora/ancillary_data/soils/

**Software and Tools:**

No special tools are required to view these data.

**Related Data Collections:**

See related information on the Soil Moisture Experiment (SMEX) Web site:
http://nsidc.org/data/amsr_validation/soil_moisture/index.html

# 4. Data Acquisition and Processing:

This data set is a subset of the global 1/12 degree resolution dataset from the Food and Agriculture Organization (FAO) soil map of the world.  No data processing was used.

# 5. References and Related Publications:

Reynolds, C. A., T. J. Jackson, and W. J. Rawls. 2000. Estimating soil water-holding capacities by linking the Food and Agriculture Organization soil map of the world with global pedon databases and continuous pedotransfer functions. *Water Resources Research*, 36:3653-3662.

Please see the SMEX04 site to access data:
http://nsidc.org/data/amsr_validation/soil_moisture/smex04/index.html