The ISMN collects in situ soil moisture data
harmonizes the data (units and sampling rates)
applies advanced quality controls
stores the processed data and
distributes the data for FREE

The International Soil Moisture Network (ISMN) in support of Satellite Soil Moisture Validation

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The International Soil Moisture Network (ISMN) collects in situ soil moisture data, harmonizes the data (units and sampling rates), applies advanced quality controls, stores the processed data and distributes the data for FREE.

We greatly thank all data providers who kindly share their data with the ISMN!

Figure: available stations in ISMN Data viewer

Graph: Temporal coverage of all 63 contributing networks

Data portal
https://ismn.geo.tuwien.ac.at/

Figure: Additional variables at ISMN

In situ data + metadata
Soil moisture + 7 additional variables integrated in the DB
63 networks participate (status May 2020)
Daily update of 6 NRT networks -> 943 stations (status May 2020)
> 1100 Peer reviewed publications making use of ISMN data
Figure: ISMN processing – from raw data to database storage

- **Data Collection**
- **Data Harmonization**
- **Quality Control**
- **Database Storage**
- **Data Portal**

**Data Collection**

- Receiving raw data
- Metadata
- In situ data
- Data processing
- Data harmonization
- Quality control
- Database

**Additional datasets**
- Köppen – Geiger climate class
- ESA CCI - Land cover
- Harmonized World Soil Database

**Ancillary variables**
- NASA’s GLDAS Noah

**Flagging System**

- **Flag D10 – Saturated Plateau**
  - HOBE, 1.07, Decagon 5TE-A, Depth: 0.05m, id: 73818
  - Suspicious values on plateau flagged with value “D10”

**Plot:** Suspicious values on plateau flagged with value “D10”

**Flag category**

- C
- D
- M
- G

**Flag values**

- C01 - C03
- D01 - D10
- Parameter value missing OR derived parameter can not be computed
- Good

**Definition**

- Threshold based flags for all variables used in the ISMN (soil moisture, soil temperature, temperature air, etc.)
- Questionable / dubious
- Parameter value missing OR derived parameter can not be computed
- Good

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The International Soil Moisture Network (ISMN)

Applications/Products using ISMN data

ESA CCI Soil Moisture

Figure: ESA CCI Soil Moisture Product (v04.7)

https://www.esa-soilmoisture-cci.org/

Quality Assurance for Soil Moisture

https://qa4sm.eodc.eu/
Welcome to our newest contributors!

Plot: Stations of new networks mapped with ISMN data reader

ISMN - https://ismn.geo.tuwien.ac.at/
ISMN data reader - https://github.com/TUW-GEO/ismn
contact - ismn@geo.tuwien.ac.at