A Big Earth Data Platform for Three Poles

**HiWATER: Dataset of ground truth measurements synchronizing with TerraSAR-X satellite overpassing in the Daman Superstation on June 4, 2012**

1、Description

The first dataset of ground truth measurements synchronizing with TerraSAR-X was obtained in the Daman foci experimental area on 4 June, 2012. The satellite image was in StripMap mode and HH/VV polarization with an incidence angle of 22-24°, and the overpass time was approximately at 19:00 UTC+8.
The second dataset of ground truth measurements synchronizing with TerraSAR-X was obtained in the Daman foci experimental area on 15 June, 2012. The satellite image was in StripMap mode and HH/VV polarization with an incidence angle of 22-24°, and the overpass time was approximately at 19:00 UTC+8.
The third dataset of ground truth measurements synchronizing with TerraSAR-X was obtained in the Daman foci experimental area on 26 June, 2012. The satellite image was in StripMap mode and HH/VV polarization with an incidence angle of 22-24°, and the overpass time was approximately at 19:00 UTC+8.

The measurements were conducted at a sampling plot southeast to the Daman Superstation with an area of around 100 m × 100 m, which was dominantly planted with maize. Steven Hydro probes were used to collect soil moisture and other measurements with an interval of 5 m. For each sampling point, two measurements were acquired within an area of 1 m2, with one for the soil covered by plastic film (point name was tagged as LXPXXA) and the other for exposed soil (point name was tagged as LXPXXB). Concurrently with soil moisture sampling, vegetation properties were measured at around 10 locations within this sampling plot.

Observation items included:
Soil parameters: volumetric soil moisture (inherently converted from measured soil dielectric constant), soil temperature, soil dielectric constant, soil electric conductivity.
Vegetation parameters: biomass, LAI, vegetation water content, canopy height, row distance and leaf chlorophyll content.

Data and data format:
This dataset includes two parts of measurements, i.e. soil and vegetation parameters. The former is as shapefile, with measured items stored in its attribute table. The measured vegetation parameters are recorded in an Excel file.

2、Keywords

Theme：Soil,Radar remote sensing,Soil temperature,Soil moisture/Water content,Terrestrial Surface Remote Sensing
Discipline：Terrestrial Surface
Places：Heihe River Basin, the artificial oasis experimental area in the middle reaches, Daman Superstation
Time：2012-06-04, 2012

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：4.7MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：38.855 | - |
| west：100.372 | - | east：100.374 |
| - | south：38.853 | - |

5、Time frame:2018-11-23 10:49:53+00:00--2018-11-23 10:49:53+00:00

6、Reference method

References to data:

LI Xin. HiWATER: Dataset of ground truth measurements synchronizing with TerraSAR-X satellite overpassing in the Daman Superstation on June 4, 2012. A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.047.2013.db2017

References to articles:

Li, X., Liu, S.M., Xiao, Q., Ma, M.G., Jin, R., Che, T., Wang, W.Z., Hu, X.L., Xu, Z.W., Wen, J.G., Wang, L.X. (2017). A multiscale dataset for understanding complex eco-hydrological processes in a heterogeneous oasis system. Scientific Data, 4, 170083. doi:10.1038/sdata.2017.83.

7、Supporting project information

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8、Data resource provider

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