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2. Description of data files

Total shortwave and NIR broadband albedo data

Broadband albedo data was collected using Kipp and Zonen CM14 albedometers.

The data file contains albedo values collected along 5 transects which are identified by date and name. The albedo values in these files are averages of 5 (or occasionally more) measurements taken at each point on the transects.

Missing values are coded as -999.
described in Excel.

The file format is .csv and will open as

Variables (columns)	Description	Units/Format	Sensor
Date_collected	Date measurement taken	yyyy/mm/dd	Not applicable
Transect	Measurement transect starting at tower and extending in named direction	None	Not applicable
Site number	Measurement location along transects. 1 references the site closet to the tower and 11 the site farthest from the tower. For the grassland transects, site 1 is located at the end by the road / fence.	Integer	Not applicable
SZA corrected	SZA corrected files provide values with corrections for solar zenith angle effects	Yes/No	Not applicable
Soil moisture corrected	Moisture corrected files provide values corrected for soil moisture effects	Yes/No	Not applicable
Time_local	Mountain Standard Time (6 hour offset)	hh:mm	Not applicable
Time_GMT	Greenwich Mean Time	hh:mm	Not applicable
Albedo_SW	SW_albedo is the total broadband albedo 305-2800nm	%	Kipp and Zonen CM14 albedometers
Albedo_NIR	NIR_albedo is the NIR broadband albedo 695-2800nm	%	Kipp and Zonen CM14 albedometers
Solar_azimuth	Solar azimuth angle	Degrees	Calculated?
Solar_zenith	Solar zenith angle	Degrees	Calculated?
Latitude	Latitude provided in decimal degrees from differentially corrected GPS measurements with the WGS84 datum.	Decimal Degrees	Trimble GeoExplorer II
Longitude	Longitude provided in decimal degrees from differentially corrected GPS measurements with the WGS84 datum.	Decimal Degrees	Trimble GeoExplorer II
Altitude	Height is in metres above MSL.	m	Trimble GeoExplorer II
Photoid	photoid is a file name identifier for associated hemispherical photographs and classified images.	None	Not applicable
Original data file name	Original data file name from Hyman and Lucht before consolidation and addition of date, location, and correction variables.	None	Not applicable

Latitude and longitude, provided in decimal degrees are from differentially corrected GPS measurements with the WGS84 datum. Data was collected using a Trimble GeoExplorer II. 120 samples were taken at each location point with a 5 second sampling rate ensuring that a minimum of 4 satellites were in view. Differential correction was performed using coincident measurements taken using data from the permanent Trimble GPS installation at New Mexico State University.

Original data files combined into one file by ORNL DAAC. These files have been zipped into a file named albedo_original_files.zip and are available on the ORNL DAAC ftp site.

22ndMay1997_north_sza_corrected.dat
23rdMay1997_east_sza_mois_corrected.dat
23rdMay1997_north_sza_corrected.dat
23rdMay1997_south_sza_mois_corrected.dat
25thMay1997_longeast_sza_corrected.dat
25thMay1997_middle_longeast_sza_corrected.dat
26thMay1997_north_sza_corrected.dat
26thMay1997_west_sza_corrected.dat
27thMay1997_grassland1_sza_corrected.dat
27thMay1997_grassland2_sza_corrected.dat
27thMay1997_grassland3_sza_corrected.dat

Original Notes:

- i) sza files provide values with corrections for solar zenith angle effects for the north, west, longeast and grassland transects
- ii) sza_mois files provides values for the south and east transect measurements corrected for both solar zenith angle and soil moisture effects
- iii) grassland1, grassland2 and grassland3 refer to three transects measured at different times on the 27th May
- iv) Decimalised time is calculated using:

```
((($2!=0)&&($1!="#"))){  
    time=$2;  
    hours=int(time/10000);  
    time-=(hours*10000);  
    minutes=int(time/100);  
    seconds=time-(minutes*100);  
    print (hours*3600 + minutes*60 + seconds)  
}
```

Hemispherical photography

b) Hemispherical photography was acquired for all sites for which albedo was measured. File names correspond to photoid field in albedo data file. Hemispherical and classified photographs have been zipped and are available as data files. Three pairs of color/classified photographs are included in .pdf format as companion files.

Header information for hemispherical photography (*photo.bin) files is:

Number of lines: 1024
Number of samples: 1536
Number of bands: 3 (BIP - Band Interleaved by Pixel)
Bytes: 1
Byteorder: 3210 (as reported by IPW)

Header information for classified image (*classified.bin) files is:

Number of lines: 1024
Number of samples: 1536
Number of bands: 1
Bytes: 1
Byteorder: 3210 (as reported by IPW)

The classified images contain five values:

Digital Number	Class
0	Unclassified
50	Soil
100	Grey / dormant vegetation
150	Dead / woody vegetation
200	Live vegetation

Hyman MA Thesis

c) Original postscript files of the MA Thesis were converted to Acrobat .pdf format, combined into one .pdf document, and it is a companion file for this data set for user convenience.

Postscript files have been compressed and are available on the ORNL DAAC ftp site. Postscript files of the MA Thesis that provides a full report on the study are:

File:	Contents:
jornada_albedo_prelim.ps	Preliminary pages
jornada_albedo_main.ps	Main text
jornada_albedo_sec1_figs.ps	Section 1 figures

jornada_albedo_sec2_figs.ps	Section 2 figures
jornada_albedo_sec3_figs.ps	Section 3 figures
jornada_albedo_sec4_figs.ps	Section 4 figures
jornada_albedo_sec5_figs.ps	Section 5 figures
jornada_albedo_sec6_figs.ps	Section 6 figures
jornada_albedo_references.ps	References

These are formatted for US Letter Size paper.

3. Requested Acknowledgement / References for data use

Please note that use of this data should include the following reference:

Hyman, A.H. 1998: Characterising the spatial variability of albedo in a semi-desert environment for the validation of satellite data. Master's Thesis, Boston University, unpublished.

Citations should subsequently make reference to journal articles published in a special issue of Remote Sensing of Environment on Jornada in 2000.

Barnsley, M.J., P.D. Hobson*, A.H. Hyman, W. Lucht, J-P. Muller and A.H. Strahler. 2000. Characterizing the Spatial Variability of Broadband Albedo in a Semidesert Environment for MODIS Validation. Remote Sensing of Environment, Volume 74, Issue 1.