BOREAS RSS-16 LEVEL-3B DC-8 AIRSAR CM IMAGES

Summary:

The BOREAS RSS-16 team used satellite and aircraft SAR data in conjunction with various ground measurements to determine the moisture regime of the boreal forest. RSS-16 assisted with the acquisition and ordering of NASA JPL AIRSAR data collected from the NASA DC-8 aircraft. The NASA JPL AIRSAR is a side-looking imaging radar system that utilizes the SAR principle to obtain high-resolution images that represent the radar backscatter of the imaged surface at different frequencies and polarizations. The information contained in each pixel of the AIRSAR data represents the radar backscatter for all possible combinations of horizontal and vertical transmit and receive polarizations (i.e., HH, HV, VH, and VV). Geographically, the data cover portions of the BOREAS SSA and NSA. Temporally, the data were acquired from 12-Aug-1993 to 31-Jul-1995. The level-3b AIRSAR CM data are in compressed Stokes matrix format, which has 10 bytes per pixel. From this data format, it is possible to synthesize a number of different radar backscatter measurements. The data are stored in binary image format files.

Companion files include (1) an image inventory listing to inform users of the images that are available and (2) example thumbnail images that may be viewed and the image data files downloaded using a convenient viewer utility.

A guide document which includes more information about this data set can be found at http://daac.ornl.gov/boreas/RSS/airscm3b/comp/RSS16_AIRSAR_CM.txt.

ORNL DAAC maintains information on the entire BOREAS Project.

Data Citation

Cite this data set as follows:

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References:

Sellers, P., and F. Hall. 1994. Boreal Ecosystem-Atmosphere Study: Experiment Plan. Version 1994-3.0, NASA BOREAS Report (EXPLAN 94).

Sellers, P., and F. Hall. 1996. Boreal Ecosystem-Atmosphere Study: Experiment Plan. Version 1996-2.0, NASA BOREAS Report (EXPLAN 96).

Sellers, P. J., F. G. Hall, R. D. Kelly, A. Black, D. Baldocchi, J. Berry, M. Ryan, K. J. Ranson, P. M. Crill, D. P. Lettenmaier, H. Margolis, J. Cihlar, J. Newcomer, D. Fitzjarrald, P. G. Jarvis, S. T. Gower, D. Halliwell, D. Williams, B. Goodison, D. E. Wickland, and F. E. Guertin. 1997. BOREAS in 1997: Experiment Overview, Scientific Results and Future Directions. Journal of Geophysical Research 102 (D24): 28, 731-28,770.

Sellers, P., F. Hall, and K.F. Huemmrich. 1996. Boreal Ecosystem-Atmosphere Study: 1994 Operations. NASA BOREAS Report (OPS DOC 94).

Sellers, P., F. Hall, and K.F. Huemmrich. 1997. Boreal Ecosystem-Atmosphere Study: 1996 Operations. NASA BOREAS Report (OPS DOC 96).

Sellers, P., F. Hall, H. Margolis, B. Kelly, D. Baldocchi, G. den Hartog, J. Cihlar, M.G. Ryan, B. Goodison, P. Crill, K.J.Ranson, D. Lettenmaier, and D.E. Wickland. 1995. The boreal ecosystem-atmosphere study (BOREAS): an overview and early results from the 1994 field year. Bulletin of the American Meteorological Society. 76(9):1549-1577.

van Zyl, J. 1992. The AIRSAR System, JPL document.

van Zyl, J. 1995. AIRSAR Integrated Processor Documentation, Version 0.01, April 21.

Data Format:

For information on Parameter/Variable Names, Variable Description/Definition, Units of Measurement, and Data File Format see this companion file
http://daac.ornl.gov/boreas/RSS/airscm3b/comp/airscm3b.def

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