BOREAS RSS-03 ATMOSPHERIC CONDITIONS FROM A HELICOPTER-MOUNTED SUNPHOTOMETER

Summary:

The BOREAS RSS-03 team collected and processed helicopter-based measurements of atmospheric conditions to estimates of aerosol optical thickness and atmospheric water vapor. The automatic sun-tracking photometer for helicopters was deployed during all three IFC's of 1994 at numerous tower and auxiliary sites in both the NSA and SSA. Seven spectral channels (440, 540, 613, 670, 870 and 1030 am) were chosen to span the visible and NIR wavelengths and to avoid gaseous absorption. One additional channel, 940 nm, was selected to measure the water column abundance above the helicopter platform.

A guide document which includes more information about this data set can be found at http://daac.ornl.gov/boreas/RSS/rs3atmos/comp/RSS03_Helo_Sun_Photo.txt.

ORNL DAAC maintains information on the entire BOREAS Project.

Data Citation

Cite this data set as follows:

Walthall, C. L., and S. Loechel. 1999. BOREAS RSS-03 Atmospheric Conditions from a Helicopter-Mounted Sunphotometer. Data set. Available on-line [http://www.daac.ornl.gov] from Oak Ridge National Laboratory Distributed Active Archive Center, Oak Ridge, Tennessee, U.S.A. doi:10.3334/ORNLDAAC/288.

References:

Loechel, S.E., C.L Walthall, E. Brown de Colstoun, J. Chen, B.L. Markham and J. Miller. 1997. Variability of boreal forest reflectances as measured from a helicopter platform. Journal of Geophysical Research, BOREAS Special Issue, Vol 102, No. D24, PP. 29,495-29,503.

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

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.

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

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

Sellers, P., F. Hall, and K.F. Huemmrich. 1997. Boreal Ecosystem-Atmosphere Study: 1996 Operations. NASA BOREAS Report (OPS DOC 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 (JGR), BOREAS Special Issue, 102(D24), Dec. 1997, pp. 28731-28770.

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/rs3atmos/comp/rs3atmos.def

Document Information:

19-Mar-1999 (data set citation revised on 10-Sep-2002)

Document Review Date:

19-Mar-1999

Document Curator:

webmaster@daac.ornl.gov

Document URL:

http://daac.ornl.gov