

BOREAS RSS-03 Reflections Measured from a Helicopter-Mounted Barnes MMR

Summary:

The RSS-03 team acquired helicopter-based measurements of forested sites during BOREAS with a Barnes MMR. The data were collected in 1994 during the three BOREAS IFCs at numerous tower and auxiliary sites in both the NSA and SSA. The 15-degree FOV of the MMR yielded approximately 79 m from the 300 m altitude ground resolution. The MMR has seven spectral bands that are similar to the Landsat TM bands, ranging from the blue region to the thermal. Note:

A guide document which includes more information about this data set can be found at http://daac.ornl.gov/boreas/RSS/rss3hmmr/comp/RSS03_Helo_MMR.txt.

ORNL DAAC maintains information on the entire [BOREAS Project](#).

Data Citation

Cite this data set as follows:

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References:

Loeschel S., C.L. Walther, E. Brown de Colstoun, J. Chen and B. Markham. 1996. Spatial and temporal variability of surface cover at BOREAS using reflectance from a helicopter platform. International Geosciences and Remote Sensing Symposium (IGARSS) Spring 1996, Lincoln, NE.

Loeschel, S.E., C.L Walther, 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, Vol 102, No. D24, PP. 29, 495-29,503.

Markham, B.L., F.M. Wood Jr., and S.P. Ahmad. 1988. Radiometric calibration of the reflective bands of NS001-thematic mapper simulator (TMS) and modular multispectral radiometers (MMR). In Recent Advances in Sensors Radiometry and Data Processing for Remote Sensing Proc., SPIE 24, pp. 96-108.

Robinson, B. F., R. E. Buckley, and J.A. Burgess, 1981. Performance evaluation and calibration of a modular multiband radiometer for remote sensing field research, in Contemporary Infrared Standards and Calibration, Proc. SPIE Int. Soc. Opt. Eng., 308, 147-157..

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. and F. Hall. 1997. BOREAS Overview Paper. JGR BOREAS Special Issue, 201.

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.

Strebel, D.E., D.R. Landis, K.F. Huemmrich, and W.W. Meeson. 1994. Collected Data of The First ISLSCP Field Experiment, Volume 1: Surface Observations and Non-Image Data Sets. Published on CD-ROM by NASA.

Vermote E., D. Tanre and J.J. Morcrette. 1997. Second simulation of the satellite signal in the solar spectrum 6S: an overview. IEEE Trans. Geosci. Remote Sens. vol. 35 no. 3, pp. 675.

Vermote, E., D. Tanre, J.L. Deuze, M. Herman, and J.J. Morcrette. 1996. Second simulation of the satellite signal in the solar spectrum (6S), 6S User Guide Version 1, October 7, 1996. University of Maryland/Laboratoire d'Optique Atmospherique, 216 pp. (available via anonymous ftp at kratmos.gsfc.nasa.gov).

Walther, C. and E. Middleton. 1992. Assessing spatial and seasonal variations in grasslands with spectral reflectances from a helicopter platform. J. Geophys. Res., vol. 97, no. D17, pp. 18905-18912.

Walther, C., D.L. Williams, B. Markham, J. Kalshoven, and R. Nelson. 1996. Development and present configuration of the NASA GSFC/WFF helicopter-based remote sensing system. International Geosciences and Remote Sensing Symposium (IGARSS) Spring 1996, Lincoln NE.

Walther, C., S.E. Loeschel, K.F. Huemmrich, E. Brown de Colstoun, J. Chen, B. L. Markham, J. Miller, and E.A. Walter-Shea. 1997. Spectral Information Content of the Boreal Forest, 10th

International Colloquium on Physical Measurements and Signatures in Remote Sensing,
International Society for Photogrammetry and Remote Sensing, Courchevel, France.

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/rss3hmmr/comp/rss3hmmr.def>

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