

Geophysical Research Abstracts,  
Vol. 10, EGU2008-A-02722, 2008  
SRef-ID: 1607-7962/gra/EGU2008-A-02722  
EGU General Assembly 2008  
© Author(s) 2008



## **Improvements in AOD estimation using multi-angle CHRIS/PROBA images**

**W.H. Davies**, P.R.J. North, W.M.F. Grey and M.J. Barnsley

School of the Environment and Society, Swansea University, Singleton Park, Swansea, SA2  
8PP, UK

([ggdaviesw@swansea.ac.uk](mailto:ggdaviesw@swansea.ac.uk))

A method has been developed to estimate Aerosol Optical Depth (AOD) over land surfaces using high resolution, hyperspectral, multi-angle CHRIS/PROBA images. The CHRIS instrument is mounted aboard the PROBA satellite, and provides up to 62 bands. The PROBA satellite allows pointing to obtain imagery from five different view angles within a short time interval. The method uses inversion of a coupled surface/atmosphere radiative transfer model, and includes a general physical model of angular surface reflectance. An iterative process is used to determine the optimum value of providing the best fit of the corrected reflectance values for a number of view angles and wavelengths with those provided by the physical model. This method has previously been demonstrated on data from the Advanced Along-Track Scanning Radiometer (AATSR), and is extended here to the spectral and angular sampling of CHRIS/PROBA. The values obtained from these observations are validated using the Aerosol Robotic Network (Aeronet) and it is expected that an improved estimate of AOD will be provided.