Atmos. Meas. Tech. Discuss., 3, C451–C452, 2010
www.atmos-meas-tech-discuss.net/3/C451/2010/

Atmospheric Measurement Techniques Discussions

Interactive comment on "A sea surface reflectance model for (A)ATSR, and application to aerosol retrievals" *by* A. M. Sayer et al.

Anonymous Referee #3

Received and published: 19 May 2010

This paper describes an improved version of the Oxford-RAL Aerosols and Clouds (ORAC) algorithm for aerosol retrievals over the ocean. The improvement concerns a more realistic modeling of the contribution of the ocean to the TOA measured signal. The new algorithm also allows to perform retrievals for glint contaminated measurements. The algorithm is applied to AATSR measurements and different retrieval characteristics are discussed. Also, the retrieved AOD values are compared to MODIS retrievals and to some extend to ground based AERONET measurements. The paper is suitable for AMT and is a relevant contribution to the field of aerosol satellite remote sensing. The new aspect of the paper is the application to AATSR measurements and comparison to MODIS and AERONET. The improved ocean reflection model is for a large part a collection of existing models for different contributions to ocean reflection. These existing models are well described in the scientific literature and can be

reproduced based on the original publications. Therefore, I think the part of the paper describing the ocean reflection model should be reduced substantially. References to existing literature could largely replace this part of the paper. For example, it is not needed to give the Cox and Munk (1954) equations, and explain how to calculate the Fresnel coefficients. The same applies to the description of the underlight contribution.

If the part of the paper that describes the ocean model is reduced substantially, it will be much easier for the reader to focus on the new aspects of this paper.

Interactive comment on Atmos. Meas. Tech. Discuss., 3, 1023, 2010.