 # Anonymous Referee #1

This paper describes a method used to atmospherically correct hyperspectral data from the Hyperspectral Imager for the Coastal Ocean (HICO.) The approach used data from AAOT to determine atmospheric parameters other than the aerosol type. Using their approach the authors show that the maritime aerosol model in 6Sv provides the best results as measured by the root mean square difference between the measured and calculated reflectance values.

I believe that the paper is a worthwhile addition to the understanding of atmospheric correction. However, I am concerned that the English is poor enough that many readers will not be able to fully understand the content. I strongly suggest that the authors find a way to improve that aspect of the paper. I think that the changes needed are more than minor but aren't described by the term major either.

RESPONSE. The authors are conscious the needful of the manuscript revision in terms of English and Grammar. The final revised version of the manuscript will be edited by a native English speaking as standard service of AMT.

There is one question that might be worth addressing. What significance do you attached to the generally increasing value of the ED as the wavelength goes down?

The spectra are generally decreasing below 500nm while the ED continues to increase.

RESPONSE. In general, the radiative impact of the aerosol decreases with wavelength along the visible spectral domain. The expected contribution of aerosol type, characterized by different microphysical and optical properties, to the atmospheric radiative field is higher before 500nm than beyond. Consequently, we can affirm that the ED underlines the role of the aerosol type for shorter wavelength (below 500nm).

A couple of minor points:

1) You should add the reference Gao, B. C., Li, R. R., et al, "Vicarious Calibrations of Hico Data Acquired from the International Space Station", Applied Optics, 51 (14) 2559-2567 (2012.) HICO is not calibrated with the laboratory calibration nor does it have an on-board calibration facility, as you are likely aware.

RESPONSE. The reference (Gao et al., 2012) to the manuscript was added.

2) Top of page 8: There is a reference to the FWHM of the HICO spectral channels being in the header file of the image. Many people have no access to this file and therefore cannot know what value you used. Please provide the actual width in nm.

RESPONSE. The value of the FWHM found in the header file of HICO data ("i.e., 10nm for the first 60 channels from 404 to 742 nm and 20nm for the remaining 27 between 748 and 897 nm") has been introduced in the manuscript.

3) In figure 5, I would like to see more wavelength tic marks. I cannot tell, for instance, if some of the shapes line up with known absorption features.

RESPONSE. We increased the wavelength tic marks. The reviewer comment is useful to add on the manuscript that the ED is close to the noise of the signal (SNR) when the aerosol content is negligible (27 August 2012 with aerosol optical thickness at 550nm is 0.01).

4) Perhaps, I missed it but you should state how many points were averaged in the ROIs to make up the spectra shown in figure 4.

RESPONSE. The numbers of pixels (i.e. 2500 pixel) used for each ROIs has been added.

5) In the text there is discussion of a normalized Euclidean Distance (bottom of page 3) but in Figure 5 is in the ED. Please make consistent or otherwise explain this in the text.

<u>RESPONSE.</u> At the bottom of page 3 we introduce the use of the Normalized Root Mean Square (NRMSE) computed in order to evaluate the radiative impact of 6SV default aerosol types with respect to the AERONET inversion products. Then, in the Results, we discuss the values of the Euclidean Distance according to Fig. 5. Indeed, we never mentioned a 'normalized Euclidean Distance'.