Atmospheric
Chemistry
and Physics
Discussions

Interactive comment on "Sky radiance at a coastline and effects of land and ocean reflectivities" *by* Axel Kreuter et al.

Anonymous Referee #2

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The paper "Sky radiance at a coastline and effects of land and ocean reflectivities" by Axel Kreuter et al. describes the impact of heterogeneous albedo environment on sky radiance measurements at a coastal site. The authors analyze the effect of the albedo change between the land and the sea, as well as the effect of the anisotropy of the reflectance of the surfaces. This effect is studied on the almucantar as well as on the zenith radiance.

Although the experimental data is scarce for a full evaluation of the heterogeneous albedo effect, the agreement with the model is correct and the differences obtained with respect to a homogeneous model are very significant. The paper is clearly structured and well written. There are only minor comments.

Page 2, Line 4. From Coakley (2003): "Even though isotropic reflection is not common,

isotropic reflection is often adopted as an approximation because it simplifies estimates of the reflected intensities". So, from the referenced paper it can not be understood that land reflectance is typically diffuse. It is just the simplest approximation, and thus it is typically used.

Page 3, Line 14. Can you provide the zenith radiance error due to be approximated by a 60° field of view measurement?

Page 3, Line 23. To my knowledge, the Pandora-2s aerosol product is still in development phase. Can you clarify if AOD measurements are from Pandora or from the auxiliary sun photometer? Can you provide any further information about the auxiliary sun photometer?

Page 4, Line 22. Please clarify why aerosol properties are specified according to the OPAC aerosol type continental average instead of the measured AOD.

Page 7, Line 2. In order to properly establish the variation of the optical thickness, can you please provide mean value and standard deviation of Angstrom exponent along with the beta values?

Fig.2 Even if it is clarified in the caption, magnitude and units should be in the y-axis of the graph.