

## ***Interactive comment on “Equivalent sensor radiance generation and remote sensing from model parameters – Part 1: Equivalent sensor radiance formulation” by G. Wind et al.***

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Review of “Equivalent sensor radiance generation and remote sensing from model parameters – Part 1: Equivalent sensor radiance formulation” by G. Wind, A. M. da Silva, P. M. Norris, and S. Platnick

Recommendation: This paper presents a general procedure for calculating equivalent sensor radiances from the GEOS-5 general circulation and data assimilation model, and then using these in a comparable retrieval through the operational MODIS cloud retrieval code. In this way it is able to help identify strengths and weaknesses in the GEOS-5 model, and can serve to further investigate model development. The text

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is well-written and the analysis and figures very clearly presented. I recommend this paper be accepted for publication with only minor editorial changes.

General Comments:

1. This important paper is well written and easy to follow, and the offer to make the software developed herein publically available is commendable.

Major Comments:

1. Illustrating the model vs observations for both an Aqua granule (where 1.6  $\mu\text{m}$  band doesn't work properly) and Terra granule (where all bands work well) is a good example of demonstrating the capability of the observations (and model). Also choosing a case in which the model obtains high clouds and the observations low clouds (Aqua example) is a good comparison to the other case in which both model and observations (MODIS Terra).

Minor Comments:

1. Page 4111, line 14 – Note that the MODIS snow and ice dataset is a multiyear average by ecosystem, and not a 'zonal' snow/ice albedo dataset. I suggest changing the sentence to something like ‘...use the MODIS multiyear average snow/ice albedo dataset (Moody et al., 2007).’

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Interactive comment on Geosci. Model Dev. Discuss., 6, 4105, 2013.

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