

## ***Interactive comment on* “Long-term simulations (2001–2006) of biomass burning and mineral dust optical properties over West Africa: comparisons with new satellite retrievals” by F. Malavelle et al.**

### **Anonymous Referee #1**

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Review of “Long-term simulations (2001-2006) of biomass burning and mineral dust optical properties over West Africa: comparisons with new satellite retrievals” Author(s): F. MALAVELLE et al. MS No.: acp-2011-742

General – I think this is a good paper. It is important to compare the aerosol optical property results from numerical models to remote sensing results both from the ground and from satellite. The remote sensing retrievals are getting more and more complex and there needs to be consistence checks. The in situ measurements are possible only in a limited time and space so that the remote sensing methods will be necessary to establish climate important parameters.

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The problem with reviewing this type of paper, however, is the causes of the difference in the remotely sensed and model computed quantities are difficult to establish. Both the model and the remote sensing technique have relatively large uncertainties. Nevertheless, the effort is worthwhile and I recommend the paper for publication.

There are some English corrections that need to be made, but nothing a good editor can't handle.

### Specific Comments

Abstract line 3 – “propose” should probably be “present”

I believe the reference to AERONET/PHOTON should be AERONET/PHOTONS

3.1.1 The negative AEAOT is, as the authors say, unrealistic. As they are going to rerun the cases with new Kext values, the question is whether they should redo the cases for this paper. At least, they should address the question of how much difference this will make.

3.2.1 “fail daily dust storms” should be “fail to observe daily dust storms”

Figure 5 – the authors should discuss their plot in comparison to Figure 5 of Russell et al (2010)

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Interactive comment on Atmos. Chem. Phys. Discuss., 11, 28587, 2011.

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