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Comment

## ***Interactive comment on “Development and testing of a desert dust module in a regional climate model” by A. S. Zakey et al.***

**A. S. Zakey et al.**

Received and published: 24 May 2006

Thanks for your comment !

1 : As the vocation of RegCM is to address regional and climate scales, we did not focus specifically on a detailed local validation in this paper. We chose to present two regional typical events ( Mediterranean and Saharan outbreaks) , one of them having being studied in detail ( cf SHADE JGR special issue) , and to conclude on a seasonal simulation.

2 : We included some information on wind speed simulated by RegCM, compared to ERA40 reanalysis. We did not include discussion about soil moisture effects for conciseness. Note we used a classical parameterization for moisture reduction of dust emission and many of the RegCM cited paper present result about soil moisture.

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3 : The 12 emission sub-bins are in fact covering the same range than the 4 transport bins . In fact they correspond to a first discretization of emission log normal distribution. As transport is numerally expensive, these emission bins can be aggregated in a reduced number of transport bins ( up to 12 ) chosen by the user, 4 in the basic configuration. The revised text will clarify this point. We chose to present the smaller particle emissions because these particle are the more radiatively and climatically active.

4: Gong et al., parameter. In fact a comparison using the soil aggregate size distribution from Marticorena et al. (1997) and the Gong et al. ,2003 distribution had been previously carried out by the author over Western Sahara using the ETA Model. No big differences were found. Moreover, Marticorena et al. (1997) covers 8 soil types whereas Gong et al., 2003 covers 12 soil types. As RegCM is used on very different domain of the world, Gong et al., 2003 has been retained.

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Interactive comment on Atmos. Chem. Phys. Discuss., 6, 1749, 2006.

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