

## ***Interactive comment on “The role of air-sea exchange in the marine nitrogen cycle” by T. Jickells***

**T. Jickells**

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I am grateful to the referees for their comments. I think it is an excellent idea to include a reference to the Richter paper on satellite NO/NO<sub>2</sub> and will do so in the final version. I also think its a good idea to add a comment on the role of precipitation type on scavenging, although I agree with Maren Voss that we know rather little about this so cannot really quantify the effect. I will also add a brief discussion of temporal variations in rainfall deposition, although again we know little about the effects within a storm or their likley ecological consequences. The comment about model tuning, refers to the fact that uncertain parameters in a model are usually varied to provide a best fit to data and hence final agreement with data is not a completely independent verification of the model performance. Both referees commented on the role of anthropogenic disturbance in dust production. This is a rather controvertial subject. In our review of global dust cycling (Jickells et al 2005) the concensus among the experts was that the effect is probably rather smaller on a global scale than suggested in earlier studies, though very

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uncertain. At a local level there is good evidence for anthropogenic impacts on dust production and I would suggest I expand and clarify the comment on this somewhat in the final version.

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**BGD**

3, S29–S30, 2006

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