**Atmospheric
Chemistry
and Physics
Discussions**

Interactive comment on "Seeking for the rational basis of the median model: the optimal combination of multi-model ensemble results" *by* A. Riccio et al.

Anonymous Referee #1

Received and published: 22 September 2007

This paper is very well written and roots in good and up-to-date science. It will give a serious contribution about ensemble modelling for atmospheric dispersion applications, by casting the uncertainty estimation and reduction problem into a Bayesian framework. This is a well-organized manuscript that requires only minor editorial comments. Thus, I believe that this manuscript is worthy of publication with only minor changes (listed below).

Minor comments/suggestions:

The authors are certainly aware of the literature work in Europe and US on the application of ensemble modeling for air quality predictions. In the introduction they should list

key references of those works, being air quality studies closely connected to dispersion studies.

PAGE 5704: define BMA here (is defined at page 57100.

PAGE 5707: "This is a manifestation ... divergence theorem". Explain better or provide reference.

PAGE 5708: change "...is highly probable that..." in "...is highly likely that...".

PAGE 5712: is "...difference between the highest and lowest forecast" an example of forecast error? Clarify.

PAGE 5716: label fonts on Fig 2 (and most of remaining figures) are too small, and are not easily readable.

PAGE 5719: "...as measured by the Gelman and Rubin test...". Are the authors referring to a necessary (but not sufficient) condition for convergence? Clarify.

PAGE 5719: a brief comment on the computational cost to run the algorithm would be useful.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 5701, 2007.

EGU