

Interactive
Comment

Interactive comment on “Online coupled meteorology and chemistry models: history, current status, and outlook” by Y. Zhang

Y. Zhang

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Reply to Comments by Anonymous Referee #1

Interactive comment on “Online coupled meteorology and chemistry models: history, current status, and outlook” by Y. Zhang Anonymous Referee #1 Received and published: 27 March 2008

From my point of view this paper is not a review article. A review article should give a broad overview of the current status/knowledge in one research field. But the article by Zhang is much too much restricted to developments made in the US. Only US models are discussed in detail and many important (European and other) developments are missing or cited wrongly (see other short comments). Thus the article by Zhang does not at all fulfill the requirements of a review article.

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Reply:

The reviewer's comments are factually incorrect for several reasons:

(1) This review paper was written based on the author's review of several hundreds of papers, with a final citation of 283 papers and conference presentations in the reference list. It provides an overview of the history and current status of development and application of online coupled meteorology and chemistry models. The topics of model development and application reviewed are sufficiently broad, spanning from history to current status, and to future work, from aerosol treatments to cloud treatments and aerosol-cloud interactions, from meteorological/climate models to atmospheric chemistry/air quality models, and from global to urban/regional scales. An extensive citation of publications in literatures has been included in the review paper that span from late 40s to 2008. To the best knowledge of the author, this is the first review paper with such a depth and breadth on this subject in the history. It fully meets the requirement of a review paper.

(2) The author is fully aware of online model development ongoing in other regions of the world besides the U.S. such as European and Asian work. However, most of them did not become coupled until recently, very few are truly online-coupled, not even "significantly coupled", they are overall behind US models such as (e.g., GATOR-GCMOM, WRF/Chem, MIRAGE). While more European and Asian work can be certainly included in the revised paper, it is not possible to include too many models, given the broad review scope of this paper. The current review paper provides an overview of history and current status of online coupled models in the world and then focuses on the review of detailed model treatments for the five US models that represent the current status of online coupled model development in the world, which a reasonable and only feasible approach for the topics included.

(3) This review paper has indeed cited many non-U.S. models, e.g., introduction section, section 2, pages 1842, lines 18-22. In particular, the COST action 728

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(<http://www.cost728.org>) report and web site cited in this review paper include many recent European online models. Many European online models have also been briefly reviewed in several publications (Easter et al., 2004; Baklanov et al., 2004; Baklanov and Korsholm, 2007), there is no need to repeat reviews that already appeared in the literature. Some Asian work (e.g., Takigawa et al., 1999; Uno et al., 2001, 2003) have also been cited in this review paper.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 1833, 2008.

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