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Interactive comment on "The Brazilian developments on the Regional Atmospheric Modeling System (BRAMS 5.2): an integrated environmental model tuned for tropical areas" *by* Saulo R. Freitas et al.

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We thank Dr. R. Pielke Sr for his insightful and helpful comments. We especially thanks for indicating several relevant references of RAMS description and applications. Below, we respond to his specific points.

Q) There is a need to improve the English. For example, in line 17 in section 4, it is written "Lastly, to maintain and advance its competitive in the select team of limited area regional environmental models...." It should be something like "Lastly, to maintain and advance its CAPABILITY IN limited area regional environmental models....

R) We agree with the reviewer that there is still need to improve the English. Once accepted for publication, the manuscript will go through the GMD typesetting and proofreading. By now, we did our best to improve the English, considering that English is the second language of all authors. The specific example pointed by the reviewer was fixed.

Q) The authors neglected to cite other relevant RAMS applications and model descriptions. These include: Âě Pielke, R.A., W.R. Cotton, R.L. Walko, C.J. Tremback, W.A. Lyons, L.D. Grasso, M.E. Nicholls, M.D. Moran, D.A. Wesley, T.J. Lee, and J.H. Copeland, 1992: A compre- hensive meteorological modeling system – RAMS. Meteor. Atmos. Phys., 49, 69-91. http://pielkeclimatesci.wordpress.com/files/2009/09/r-155.pdf

There are also uses of RAMS coupled to a biogeochemistry model that the authors may not know about and that provide a history of such RAMS applications; e.g. o Eastman, J.L., M.B. Coughenour, and R.A. Pielke, 2001: The effects of CO2 and land- scape change using a coupled plant and meteorological model. Global Change Biol- ogy, 7, 797-815. http://pielkeclimatesci.wordpress.com/files/2009/10/r-229.pdf o Eastman, J.L., M.B. Coughenour, and R.A. Pielke, 2001: Does grazing affect regional climate? J. Hydrometeorology, 2, 243-253. http://pielkeclimatesci.wordpress.com/files/2009/10/r-233.pdf o Lu, L., R.A. Pielke, G.E. Liston, W.J. Parton, D. Ojima, and M. Hart- man, 2001: Implementation of a two-way interactive atmospheric and ecological model and its application to the central United States. J. Climate, 14, 900-919. http://pielkeclimatesci.wordpress.com/files/2009/10/r-232.pdf There is also an earlier applications of RAMS to South America Beltran-Przekurat, A., R.A. Pielke Sr., J.L. Eastman, and M.B. Coughenour, 2011: Modeling the effects of land-use/land-cover changes on the near-surface atmo- sphere in southern South America. Int. J. Climatol., DOI: 10.1002/joc.2346. http://pielkeclimatesci.files.wordpress.com/2011/05/r-343.pdf

In terms of RAMS coupled to air quality models, there are a number of papers using both Eulerian and Lagrangian dispersion models. Two examples are Lyons, W.A., R.A. Pielke, C.J. Tremback, R.L. Walko, D.A. Moon, and C.S. Keen, 1995: Modeling

the impacts of mesoscale vertical motions upon coastal zone air pollution dispersion. Atmos. Environ., 29, 283-301. https://pielkeclimatesci.files.wordpress.com/2009/09/r-99.pdf Pielke, R.A. and M. Uliasz, 1998: Use of meteorological models as input to regional and mesoscale air quality models - Limitations and strengths. Atmos. Environ., 32, 1455-1466. https://pielkeclimatesci.files.wordpress.com/2009/10/r-184.pdf There are quite a few others, as listed as http://cires.colorado.edu/research/research-groups/roger-pielke-sr-group.

R) Thanks for indicating these valuable references, which have been all included in the manuscript. They certainly will provide the readers a broader view of the effort involved in RAMS/BRAMS development and applications.

Finally, a suite of different models are summarized in Table B in Pielke Sr, R.A., 2013: Mesoscale meteorological modeling. 3rd Edition, Academic Press, 760 pp.. This includes BRAMS as of August 2012 (pages 597-600). The authors could refer to that information to show how much BRAMS has developed since then.

R) The Table B in Pielke Sr, R.A, 2013 is now referenced in the manuscript.

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