UNIVERSITAT DE BARCELONA

A study of the shortwave schemes in the Weather Research and Forecasting model

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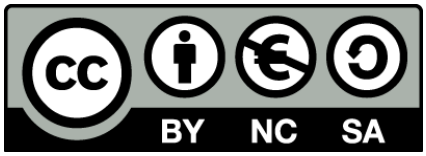

Appendix A

Contributions to the scientific community

This thesis has been developed with a clear determination to participate in the scientific community as an important part of the learning process to become a good researcher. In general, many of these contributions have been cited in the previous chapters. However, as the main purpose of a thesis is to review the work developed by the PhD candidate, we think that it is a good idea to dedicate a small section with a quick overview of the contributions.

The publications are indicated in the following points:

- 3 peer reviewed papers:
  - Montornès, A., Codina, B., Zack, J. W., and Sola, Y.: Implementation of Bessel's method for solar eclipses prediction in the WRF-ARW model, Atmos. Chem. Phys., 16, 5949-5967, doi:10.5194/acp-16-5949-2016, 2016.
  - Montornès, A., Codina, B., and Zack, J. W.: A discussion about the role of shortwave schemes on real WRF-ARW simulations. Two case studies: cloudless and cloudy sky, Tethys, 12, 13-31, 10.3369/tethys.2015.12.02, 2015.
  - Montornès, A., Codina, B., and Zack, J. W.: Analysis of the ozone profile specifications in the WRF-ARW model and their impact on the simulation of direct solar radiation, Atmos. Chem. Phys., 15, 2693-2707, doi:10.5194/acp-15-2693-2015, 2015.
- 3 oral presentations:
  - Montornès, A., Codina, B., Zack, J. W.: Implementation of the Bessel's method for solar eclipses prediction within the WRF-ARW model, 15^{th} EMS Annual Meeting and 12^{th} European Conference on Applications of Meteorology, Sofia (Bulgaria), 2015.
  - Montornès, A., Codina, B., Zack, J. W.: Solar parameterizations: impact on real WRF-ARW simulations, 5^{th} International Conference on Meteorology and Climatology of the Mediterranean, Istanbul (Turkey), 2015.
  - Montornès, A., Codina, B., Zack, J. W.: An analysis of sensitivity of WRF shortwave radiation schemes in the forecast of the surface downward flux using idealized 1-D atmospheric profile, 13^{th} EMS Annual Meeting and 11^{th} European Conference on Applications of Meteorology, Reading (United Kingdom), 2013.

- 2 posters:
  - Montornès, A., Codina, B., Zack, J. W., and Sola, Y.: Implementation of Bessel's method for solar eclipses prediction in the WRF-ARW model, 17^{th} WRF's Users Workshop, Boulder (United States), 2016.
  - Montornès, A., Codina, B., Zack, J. W.: An analysis of the performance of WRF shortwave radiation schemes in the prediction of the surface irradiance using idealized and measured 1-D atmospheric profiles, 4^{th} International Meeting on Meteorology and Climatology of the Mediterranean, Banyuls (France), 2013.
- 2 WRF's code improvements:
  - WRF v3.7: Diffused, direct and direct normal irradiance calculation was extended to CAM and FLG radiation options.
  - WRF–eclipse: Under conversations with the WRF Physics Committe at the moment of writing this thesis.