

Review of “Inclusion of biomass burning in WRF-Chem: Impacts of wildfires on weather forecasts” by Grell et al.

General comments

In this paper, a wildfire algorithm was implemented in WRF-Chem, and using this wildfire impacts on weather were investigated to understand the interaction of aerosols with radiation and microphysics. This paper contributes to our understanding of the impacts of fires on weather. However, a more detailed analysis (or possible mechanism) of how interaction of aerosols with radiation and microphysics leads to stronger storms during the daytime is needed in a revised manuscript.

Specific comments

1. Figs. 2 & 3: In Fig. 2 (Fig. 3), MODIS satellite picture for 2123 (2223) UTC is compared with the model result for 2100 (0000) UTC. What is the reason for delayed time evolution of simulated smoke compared to the observation?
2. Fig. 10: It seems that there is a time lag of about 1 h between the simulations with and without fire. I think slow development of convective storms in the runs with fires has to be explained.
3. Fig. 15: This figure is not appropriate to compare the fields with and without fire in Fig. 14 because of different location of simulated cloud system.

Technical corrects

1. Fig. 9 & 10: Please show the time evolution of both values from 1600 UTC to 2000 UTC.
2. Fig. 12: Information for contour interval and color bar are omitted.
3. Fig. 13: Time in the figure (0200 UTC) is different from that indicated in the text (0000 UTC).