

Interactive comment on “Advantages of using a fast urban canopy model as compared to a full mesoscale model to simulate the urban heat island of Barcelona” by M. García-Díez et al.

Anonymous Referee #3

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The authors compare three different types of model runs for Barcelona. The details of the models are not provided. A summary Table which compares the key features (model characteristics, run resolutions, etc) and could include the computational resources difference, and key performance differences would be a useful addition. This could be cited throughout the paper (methods, results) to allow the reader to be clear how the benefits/costs are arrived at.

More details are needed on the measurements and processing of the evaluation data; the implications of the study period selected (clear). The comment (L200) concerning the gridpoints and the land use for the evaluation data needs to be made clearer or justified. It appears a better result is being selected – rather than understanding if

C1

there is a larger issue.

All figure captions should be standalone. Add additional material/text to these.

Editorial comments – only one example given – correct throughout.

1. L5 use the term evaluated not validated (and equivalent throughout)
2. L8 including not using
3. L18 use the ‘most well-known’ rather than ‘main’
4. L36 – reword
5. L41 – see point (1) (repeated through text)
6. L47 250 m, not 450m (change throughout)
7. L63 use 13.7 not 13,7 notation (correct throughout)
8. L65 reword
9. L70 – Figure not figure
10. L85,86 4, 7 – numbers less than 10 write in full
11. L88/9 – what height and exposure? How high is the sensor? Be clear about samples and averages.
12. L92 – Cereal fields, so changing height through the course of the year
13. L93 – how high above the roof? What is the height of the building?
14. L94 Km should be km
15. All maps need scales.
16. L105 on – what correction used for emissivity? Between areas/urban etc
17. L110 be clear that selection of no cloudy days introduces a bias to certain meteo-

C2

rological conditions

18. L160 cite chapter authors, not the book
19. Table 1 link to Figure 1 (stations); Define Variance ratio or cite reference
20. L118 meters -> UK or USA English?
21. L170 standard scores or metrics – reference
22. L170 2 m
23. Figure 2 – indicate in the caption where codes for key are explained. Captions should be standalone
24. L185 Check in all places oC; or express in terms of K and remove o. In some places reversed °C (e.g. Table 1)
25. L189 – Garcia
26. L193 - Note importance of land cover. What do they represent in terms of Local Climate Zones?
27. L193 cite these previous studies
28. L200 on – But don't you need to check all grids now? Land use? Advection? Etc. what
29. Figure 3 – be explicit about UHI – temperature difference
30. L 222 (e.g. Figure 4) rather than which are here depicted in
31. L231 Figure 5 (introduce space)
32. Figure 4 – Significant figures! Relabel X-axis no need for May 2011 on all as in caption
33. L234 as above space between number and units

C3

34. L240 as above evaluation rather than validation
35. L 242 – typos near delete .advection
36. L256 – be more explicit about long spin-up. Some suggest for certain models 10-20 years are needed to get soil moisture characteristics correct.
37. Line 319 data were not was

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