The authors would like to thank the reviewer for reviewing the manuscript, and for their positive response by highlighting the added value of the manuscript. We are also thankful for their remarks for improving the manuscript. The responses to the comments can be found below, in which we refer to the revised manuscript containing the track changes, see http://www.geosci-model-dev-discuss.net/gmd-2016-58/gmd-2016-58-AC2-supplement.pdf.

Please note that some line-breaks are missing in the version with the track changes, a drawback of using latexdiff (mostly in combination with citations). Therefore, we also provide the new revised version without track changes www.geosci-model-dev-discuss.net/gmd-2016-58/gmd-2016-58-AC3-supplement.pdf.

A word of thanks will be provided in the next manuscript versions.

The paper by Wouters et al. presents the semi-emipirical urban canopy parametrization SURY and the urban bulk scheme TERRA-URB 2. SURY is used to derive bulk parameters from urban canopy parameters, which are used in more physically-explicit urban parametrization schemes. In this paper, TERRA-URB 2 with SURY parameters and coupled with the regional climate and weather model COSMO-CLM is evaluated with station and remote sensing data. Furthermore, a sensitivity analysis to SURY input parameters is conducted.

While the usage of SURY-derived parameters in conjunction with an urban bulk scheme does not account for every detail represented by more explicit schemes, SURY greatly extends the applicability and transparency of bulk schemes. The paper is well written and concise. The topic is highly relevant, thus I recommend publication after the following minor issues are addressed.

Page 12 line 4: The authors state that the range of the substrate albedo is derived from the range of the bulk albedo. From the description of SURY, I would expect exactly the opposite way of derivation: bulk albedo derived from the substrate albedo. Please clarify.

It is indeed so that SURY normally translates urban-canopy parameters (input) to bulk parameters (output). However, the parameter ranges from Stewart and Oke (2012) are those for the bulk parameters (alpha_bulk, lambda_bulk, Cv_bulk), and not for the substrate parameters (alpha, lambda_s, C_{v,s}). For clarity in future applications of SURY, we prefer to use only ranges for the input of SURY (ie., the urban-canopy parameters), which include the substrate parameters, not bulk parameters (output of SURY). Hence, for the sensitivity study, we reversed the equation of SURY to derive the substrate parameter ranges from the bulk parameters ranges in Stewart and Oke (2012), while keeping the other (morphological) parameters at their default values. In order to make this more clear for the reader, we make the following change to the revised manuscripts at P13R26-R31.

Page 24 line 13: The authors state that a lower roughness length resulted in lower wind speeds. I would expect higher wind speeds. This would be also in agreement with the reduced accumulation of excess heat in the urban centres.

Indeed, we have now replaced ‘lower wind speed’ with ‘higher wind speeds’. In that case the reduced accumulation of excess urban heat and the lower temperature mentioned in the next sentence makes sense, indeed. We have changed this in the revised manuscript, see P27R13.

I find Figure 6 quite confusing. For example, bulk parameters a given twice and the usage of space is not optimal. Maybe the authors can find a better representation of their work-flow.

We have simplified the figure for making it more clear, see P29.

Page 27 line 15: I suppose it should be “To this end” instead of “Therefore”.

We have replaced the text, see P30R20

Throughout this paper, some citations miss parentheses, for example P2L5 and L23, P10L9 and L17.

We have checked and corrected the parentheses of the references throughout the manuscript.