

Interactive comment on “Intercomparison between the Integrated Urban land Model and the Noah Urban Canopy Model” by Chunlei Meng and Junxia Dou

Anonymous Referee #1

Received and published: 11 March 2020

General comments: This paper intercompared the Noah Single Layer Urban Canopy Model (Noah/SLUCM) and the Integrated Urban land Model (IUM) using the observed fluxes data at the 325-meter meteorology tower in Beijing. Overall, this paper is well organized and easily to read; I suggest this paper should be published after a MINOR revision.

Specific comments: 1. Line 62, the key factors of the land surface models were found out. 2. Line 67, land surface comparison projects were launched. 3. Line 86, please give the full name of the acronym ISE. 4. Line 108, in urban areas are given below. 5. Equation 5, please give the equations for calculating the sensible heat flux from roof,

C1

wall and road. 6. Line 193-196, road water depth should be impervious surface water depth. 7. Line 202, road surfaces should be impervious surfaces. 8. Line 223, please give the full name of the acronym LULC. 9. Line 227, the temporal resolutions of the two models are 30min. 10. Line 261, in figure 3, the amplitude of the simulation results seem too big for both the two models, maybe the heat capacity and heat conductivity should be adjusted. 11. Line 285, as the friction velocity is extremely important and associated with the roughness, the roughness in table 1 should be adjusted too reduce the bias of the sensible heat flux. 12. Figure 7, the figure (a) is not in accordance with the figure (b), please redraw either of them. 13. Equation 22, please give the meaning of Prcp and Drain. 14. Equation 22, please give the equations for calculating the roof interception, infiltration and drainage. 15. Conclusions. The urban canopy dependency parameterization (SURY) (Wouters et al., gmd-9-3027_3054, 2016) maybe a choice for urban energy balance parameterization. 16. Table 1, road should be ground.

Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2019-298>, 2020.

C2