

This paper presents a climate-service-oriented tool TARGET for diagnosing near surface air temperature based on urban energy balance. The reviewer strongly agrees the motivation of the work that the accessibility of urban climate models should be improved by providing end-user-friendly tools with less demands for modelling expertise and specialized computing facilities. And the paper is well written with technical details clearly provided and results nicely presented. As such, the paper should be accepted after a minor revision.

However, the reviewer has the following concerns about this work and hope the authors can well address them:

- 1) Physics scheme of water surface: The choice of such a *moderately* complex lake model (Molina Martínez et al., 2006) should be justified, in particular considering OHM is used for other land surfaces, as this choice notably breaks the consistency in physics scheme for Q_G . Also, the lake model used in TARGET is neither simple to guarantee calculation performance (e.g., vertical discretization is required to get water temperature profiles) nor sophisticated to consider the physical rigour (e.g., band-based absorption of solar radiation is omitted). The reviewer should point out that OHM can also be used for water surfaces to obtain Q_G with easy adaptation (e.g., Ward et al. (2016)).
- 2) Applicability for long-term applications: Although the limitation of TARGET in long-term applications has been attributed to that in OHM, it should be noted modelling advances in OHM (e.g., corrections in OHM coefficients (Ward et al., 2016), analytical determination of OHM coefficients (Sun et al., 2017)) to address this issue should be mentioned and their potential in improving TARGET can be discussed.
- 3) Code availability: The authors suggest the Java version of TARGET for performance reason, which interested the reviewer to review the python code in addition to the paper as more and more scientific models (e.g., Hamman et al. (2018), Monteiro et al. (2018)) are being published in Python for the easy accessibility (which TARGET claims as its key feature). After the code review, the reviewer noticed in the core calculation functions, the famous `numpy` is not well utilised to conduct heavy numerical computations. To make TARGET more accessible, the authors are very encouraged to improve the Python version for better performance and to distribute it via public repositories (e.g., PyPI).

Minor Comments:

- 1) Please justify the assumption for combined resistance between roof and canyon in equation 16. It is unclear to the reviewer how the influence of roofs can be exerted on canyons.
- 2) Presentation:
 - a) Equation 16 is tediously long: simplify it.
 - b) Section 4.1.1 --> section 4.2.
 - c) C_{watr} in "list of symbols" are duplicated twice.

References:

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- Monteiro, J. M., McGibbon, J. and Caballero, R.: `symp1` (v. 0.4.0) and `climt` (v. 0.15.3) – towards a flexible framework for building model hierarchies in Python, *Geosci Model Dev*, 11(9), 3781–3794, doi:10.5194/gmd-11-3781-2018, 2018.
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- Ward, H. C., Kotthaus, S., Järvi, L. and Grimmond, C. S. B.: Surface Urban Energy and Water Balance Scheme (SUEWS): Development and evaluation at two UK sites, *Urban Climate*, 18, 1–32, doi:10.1016/j.uclim.2016.05.001, 2016.