

Earth Syst. Sci. Data Discuss., referee comment RC2
<https://doi.org/10.5194/essd-2022-251-RC2>, 2022
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Comment on **essd-2022-251**

Anonymous Referee #2

Referee comment on "High-resolution and Multitemporal Impervious Surface Mapping in the Lancang-Mekong Basin with Google Earth Engine" by Genyun Sun et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-251-RC2>, 2022

This manuscript provided 10-m resolution impervious surface area data using Sentinel-1 and Sentinel-2 data in Lancang-Mekong Basin. Overall, the novelty of this paper is not qualified for publication in ESSD for the following reasons.

(1) Mapping of impervious surface area at the global scale with 10-m or 30-m resolutions has been widely reported in many studies. The method employed in this paper doesn't show significant improvement regarding the novelty of mapping approaches as well as the mapped results and influences.

(2) Although the migration strategy of training samples across years highlights in this paper, some concerns may introduce uncertainties in this study. For example, the sampling in 2016 may omit those urbanized regions in 2021, which may bias the classification results (see Table 4). Also, the threshold of SAD is challenging to determine if these pixels have experienced change or not.

(3) The temporal consistency check is not the novelty of this work. This approach was initially proposed in the RSE paper in 2015 (in the case of Beijing). Unfortunately, I didn't find the citation of this work when they introduced the "temporal consistency check" part, and the overall framework is highly similar to that one.

Title: A 30-year (1984–2013) record of annual urban dynamics of Beijing City derived from Landsat data.

(4) It is unfair to compare the local mapping results with those of global products because it is a space-specific application at the river basin. I think the proposed approach cannot be extended directly to other regions (even the globe).

