

Referee #2: Yifang Shi

Some corrections need to be made before accepting for publication.

Thank you for taking the time to go through our manuscript once more and for providing such thorough feedback. We have made the changes as suggested and documented them line-by-line below.

Line numbers in our replies refer to the revised manuscript.

For example:

Line 15: "remote-sensing" -> "remote sensing"

We have now removed the hyphen in Line 15.

Line 41-43: a "," is missing in the sentence. It should be "If an object intercepting the light pulse is smaller than the beam's footprint (e.g., a leaf or a branch of a tree), some of the light may travel on and trigger a reflection from a second surface (e.g., understory vegetation or the forest floor)."

We have placed the comma as suggested.

Line 253: "32bit" -> "32-bit" or "32 bit", same in line 263 and line 281.

We have added a hyphen to all instances in the manuscript where it was missing between a numerical value and the unit "bit" (Lines: 235, 253, 268, 289, 333 and 579)

Line 239: "the no data value (-9999)", line 276: "the NODATA value -9999", and line 182: "a value of -9999 throughout the data set (NODATA-value)". It is better to describe it in a consistent way.

We have adapted the text. The NoData value is now consistently referred to as "NoData":

Line 182-183: "Missing data (NoData) is denoted by a value of -9999 throughout the data set."

Lines 208-210: "Instead, we generated NoData rasters for all missing descriptor - tile combinations (i.e. we assigned -9999 to all cells in those tiles). We provide a text file listing the affected "NoData" tiles in the folder of each descriptor (the file is named empty_tiles_XXX.txt, where XXX is the descriptor name)."

Line 243: "The cells in those rows and columns have no neighbouring cells and were assigned the NoData value (-9999)."

Line 260-261: "These cells in those rows and columns have no neighbouring cells and gdaldem assigns the NoData value (-9999) to these cells."

Line 281: "The corresponding cells for the affected areas are set to the NoData value -9999."

Line 328-329: "[...] , we set the value of those cells to NoData (-9999). Finally, for cells that are located on the outermost edges of the data set the heat_load_index is not

defined due to propagation of the NoData value assigned to the aspect in those cells.”

Line 557: “The masks are binary, a cell value of 1 indicates land and a value of -9999 (NoData) indicates sea or inland water, respectively.”

Line 587: “In these cases, we assigned the NoData value to the date_stamps.”

Line 313: “an useful” -> “a useful”

Indefinite article changed to “a”.

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In addition to the changes requested by Referee #2 we also changed the font face of “Descriptor” in the first rows of Tables 3 and 4 from normal to bold.