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Interactive comment on "A 30-meter resolution dataset of China's urban impervious surface area and green space fractions, 2000–2018" *by* Wenhui Kuang et al.

Anonymous Referee #1

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In this study, a multi-source data-based method for mapping UISA and UGS fractions in China using Google earth engine was proposed, and datasets for 2000-2018 were obtained. In the subpixel scale, a pixel of 30m*30m is regarded as a combination of UISA, UGS and others. The topic of the study is interesting and fits the scope of the journal. In this dataset, the composition of urban landscape is described at a more detailed scale, which makes up for the lack of data in China. However, there are still some problems that need more explanation. What's more, the innovation of this study is not clearly stated, which should be highly improved.

General comments: 1. What is the main innovation of this research? This directly

determines the value of this research. Compared with existing datasets of the same type, such as the NLCD dataset mentioned in this paper, what are the differences and improvements in the calculation method? Or does it just fill in the gap of this data in China? 2. Have you considered the unification of images of different years and the unification of images of different satellites, such as China China-Brazil Earth Resources Satellite (CBERS-1) and Huan Jing (HJ-1A/B) satellite with Landsat? I suggest more introduction of data processing. 3. When calculating the UGS fraction, have you considered the different vegetation types? Like the difference between trees and grass? Will this make a difference to the results?

Specific comments: Line 27 on page 1: It should be "environment" since it refers to the overall state of environment. Line 31 on page 1: Does rapid urbanization process result in rapid increase in urban green space? Are there any references supporting this claim? Line 34 on page 2: "other" should be deleted since China is a developing country, not a developed country. Line 43 on page 2: Does this sentence mean the definitions of different products for urban areas are based on IGBP or FAO? Line 49 on page 2: I think it's more likely to be cause and effect. So, it should not be "furthermore" here. Line 61 on page 2: The expressions of urban landscape and urban landscape have appeared for many times. The usage of this phrase is different. Please unify the form of this expression. Line 82 on page 3: When CLUD first appears in the text, a full name is required. Line 94 on page 3: "as well as" should not be used here because cultural services are part of the ecosystem services. Line 95 on page 3: Is the "restoration" here a kind of cultural services? How to understand? Line 96 on page 3: What does the "exclude this component" mean? Most products do not distinguish between parks, trees and grass? Line 97 on page 4: "a" should be deleted. Line 101-102 on page 4: In extremely dense urban agglomerations like the Yangtze River Delta, the boundaries between some cities are not obvious. How to deal with this? Are there any problems? Line 106 on page 4: The urban impervious surface area and the urban impervious surface area fraction are both abbreviated UISA. So as the UGS. This statement is ambiguous. Please modify it. Maybe you can use UISAF and

UGSF to present the fractions. Line 116 on page 4: Is it possible to use probabilities to represent ratios? How do you justify this logic? Are the input UISA classification values from pure pixels or mixing pixels? Line 124 on page 4: It should not be ith here. i should be a total number, or it should be expressed as n. Line 146 on page 5: How many samples were surveyed in the field? Line 151 on page 6: What is the higher resolution? Does visual interpretation take the smallest unit of Google images as a single pixel to calculate the number of impervious and vegetation units? Line 153 on page 6: “a” should be deleted. Line 154 on page 6: “densities” would be better to be “fractions”. Line 155 on page 6: It should be “values in the same area were”. Line 157 on page 6: “shows” should be “showed”. Line 157 on page 6: There are two “.”. Line 158 on page 6: It should be “, respectively” and “validation of”. Line 167 on page 6: It should be a new sentence form “note”. Line 169-171 on page 6: How is the urban area defined in this study? Are you using existing data and method? If so, it can not prove the advantages of this study. Line 174 on page 6: What is the actual urban expansion rate? Can you give a value to prove the similarity? Line 175 on page 6: “other” here should also be deleted. Line 181 on page 6: Does the UGS here refer to urban green space or areas with high green space fraction? Line 184 on page 7: The “main urban areas” here may not be a very appropriate statement. Line 188 on page 7: Since there are other components, why don’t you say high proportional UGS represents parks and greenbelts with ecological functions? Line 197 on page 7: “was” should be “were”. Line 199 on page 7: Please be consistent with the previous. Determine to use “dataset” or “datasets” to express the UISA and UGS data? Table 1: “Note” should be left aligned. Table 4: There should be a “Note” before “MRE. . .”. Figures: All maps lack a compass. Figure 4: What are the meanings of the small pictures on the right? Please make more explanations. Figure 8: There are two sets of legends in the figure, and some colors are similar. How to distinguish them?

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