

Interactive comment on “Derivation of land surface temperature from Landsat Thematic Mapper (TM) sensor data and analyzing relation between land use changes and surface temperature” by S. Zareie et al.

Anonymous Referee #2

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The paper used the Temperature Emissivity Separation (TES) algorithm for LST retrieving from TIRS data of the Landsat Thematic Mapper (TM). The results of this study found that special thermal conditions in Yazd city were formed by land use changes. Increasing the area of asphalt roads, residential, commercial and industrial types and decreasing the area of the parks, green spaces and fallow lands types of land uses in the Yazd city caused a rise in surface temperature during the 11-year period. However, the finding of this study would not be outstanding for the contribution to scientific progress.

C1

The abstract should be concise to show the main finding and novelty of the paper. The structure of introduction is too chaotic. It should be reorganized to several paragraphs to introduce the relative studies and emphasize the objective of the study. It lacks a detailed description of the advantage and novelty of the study.

According to the result, it shows that the spatial variations of surface temperature are affected by the conversion of land for human-dominated use (land use change) and vegetation cover. However, why was the climate change not taken into consideration in the analysis? And what was the role of the climate change on the surface temperature?

It should be noted that residential areas had a slight decrease in the surface temperature. The manuscript explained it was probably due to many cooling devices which are used in residential areas of the Yazd city, especially in the summer. The explanation was not convincing.

Table 9: what is the “Within Groups”?

The paper needs to be thoroughly checked for grammar because the poor quality of the English in places makes the text hard to follow. Spelling and grammatical mistakes should be corrected. For example: Page2 L1: “mapping” revised to “map” Page3 L7: “km²” revised to the superscript of “2” Page7 L36: deleted “ were” in “NDVI values were decreased”

Interactive comment on Solid Earth Discuss., doi:10.5194/se-2016-22, 2016.

C2