We would like to thank the reviewer for their fast work as well as the constructive critique of our paper. In particular the excerpt is quite motivating and always enjoyable to read. In this answer, we would like to discuss how we changed our paper based on this critique and where we see limits in applying these changes.

From our point of view, the critique of the reviewer can be divided into 2 main areas: First the context on a geo-level and second on the used heat stress model / impact of temperature.

The reviewer stated that we should mention the context specific limit of our study. We agree with the reviewer. We added limitations in our statements about the generalization of our study. This was done in small additions of the areas where it can be applied and the examples and explicit in a new sentence at the end of the introduction. Here we state that the method was created for European cities. We hope that this shows clearly the limitations of this study and potential future work.

Regarding the different heat stress models which measure the impact of temperature on humans, the reviewer had three remarks. These consist of how the urban heat island effect effects human health, the heat budget model of the human body as well as the incorporation of different effects such as the mode of movability and other environmental factors.

In general, we did not delve too deep into those aspects as they are not the main focus of this work and the word limit was always on our mind. In earlier drafts and during the process of writing, we had to make the decision to prune these parts to reach the word limit. It seems we were to overzealous during our pruning and tried to add information to each of these points to improve the readability and provide the necessary core information needed for later steps.

Regarding the heat island effect, ….

Regarding the heat budget model,

Regarding the impact of other modes of mobility or environmental factors, our model does not account specifically for these factors. We implemented an air temperature based approach, which includes several temperature variables. This approach therefore does not include other environmental factors, but this can be changed by applying a different model for the heat stress. Steadman´s Heat Index is calculated by assuming that the human walks at a speed of 4km/h (1.4m/s). We chose this index as it does not rely on additional data, which we did not have, and as we motivate our work by typical walking tasks, this mode of movability seems to most logical for us. As already written in the future work, other indices would be quite interesting to implement and to compare, but would be beyond the scope of this work. One interesting index would be the …. (index, why interesting). This would be especially interesting, when more data sources and factors are available to compute and compare the different indices. If one could, for example, gather the data and implement a model which measures the heat stress on motorcycle drivers, the method could be extended to other cities, where basic daily tasks are not within walking distance.

We hope that with the changes in the paper as well as this answer we can address the reviewers comments in a satisfactory way.

• Since the framework for the paper is based on the urban heat island effect I feel the author/s need to spend a bit more time explaining this in the introduction.

How, for example, exactly does the effect impact health?

How long, for example, must one be exposed to heat before it has an effect?

Is it age, gender dependent?

* Beyond the scope of this work, word limit is factor why we did not go into more detail.   
  We added a little bit more information; more can be found e.g. in :  
  $List 🡪 Thanks. Beyond scope of work, not enough words

• More information is required about the heat budget model for readers not familiar with this particularly Steadman’s heat index. What does it consist of? How was it developed? How was it constructed?

* See answer to point 1. We tried to include more informations for clarity, again the word limit. In our preliminary (german) draft, we needed roughly 5 pages for this topic alone. Therefore we limit the information here on the main focus points.