Analyzing the influence of urban morphological indexes on urban thermal environment of a cold-region city based on measurement

This study tries to analyze the influence of urban morphological indexes on temperature and RH changes in the morning, afternoon, and night in residential and commercial properties in Zhengzhou, China. This city is located in cold regions and the interest is to find out if the urban morphological indexes act differently in cold vs hot regions.

Review questions:

- In-text citations have different formats. Some include the first name, some are all in the capital, etc. Check and rewrite all the in-text citations.
- There are some writing issues; you need to edit the draft. Make long sentences smaller so you can better explain matters.
- Add the definition of Plot Ratio (PR) to the manuscript

Introduction

- **Line 31-33:** The sentence is not fluent.
- **Line 33-34:** Add reference for this sentence
- **Line 50-52:** Add reference
- **Line 56:** Replace "direct" with "directly"
- **Line 58:** I suggest you remove reference #14, as it is not showing the impact of dense urban forms on creating local cool islands. This reference mainly explains the development of a web-based tool that calculates the Sky View Factor (SVF)
- **Line 64-66:** Rewrite the sentence as "however, urban morphology has a significant influence on the thermal environment when the urban 63 compactness is higher than 0.15."
- **Line 69:** You cannot use the abbreviation H/W without explaining what it means. Replace H/W with height-to-width
- **Line 70:** Why the author's name (reference 18) is in all capital? Change it and also change the reference on page 18 accordingly.
- **Line 71:** Replace "WRD" with "Weather Research and Forecasting Model (WRF)"
- **Line 72-73:** What do you mean by "city's urban center"?
- **Line 70-75:** The entire sentence is vogue. You have to explain that they used two different scenarios (dispersed-city and compact-city scenarios) and then what they have found.
- **Line 85-90:** One sentence; rewrite it into 2-3 sentences and explain the results clearly
- **Line 107:** investigated
- **Line 109-112:** Add reference

Study area

- **Line 132-133:** I suggest you delete the sentence as you have the same sentence in the introduction
- **Figure 1:** what ZC and ZD stand for?
- **Line 136-141:** Add references for city info including the area, population, climate

- **Figure 2:** Add the reference for the data used in this plot and explain the average annual temperature for which period?
- **Line 154-163:** Were there specific reasoning for the Er-qi commercial district? Or just selected randomly?

Methodology and settings

- **Line 193-194:** Add explanation on why those time frames were selected
- **Line 209:** why that specific point was selected as the fixed point?

Methodology and settings

- What method did you use to validate your collected data?

Results

- Did you find a reason why humidity was higher in the fixed reference point? Probably add a little about the location of the reference point.
- Add one sentence explaining the definition of "Air Temperature Ratio" to the manuscript

Discussion

- As the main objective was to see if cities in cold regions act differently (vs hot regions), It would be great if you can add studies that did the same analysis in hot regions and discuss how the parameters influencing would be different

Conclusion

- Change the title to "Summary and conclusion" as it is mainly a summary of the study

Figures

- **Figure 8**: Suggestion; show the morning and night GCR plots in two different plots and prepare a new image with 4 plots in 2 rows and 2 columns
- **Figure 9**: Same as figure 8, plot c is very busy
- **Figure 11**: plots are very busy, make them more readable