



## Review of the habilitation thesis by Mgr. Michal Žák, PhD.

This document contains my evaluation of Dr. Michal Žák's Habilitation thesis *Urban climate in Central Europe*. The Habilitation thesis is presented in the form of a classical, cumulative work, containing four peer-reviewed publications preceded by a contextual framework associating them. The research articles and one book chapter have been published in important and highly appreciated international scientific journals and publishing house. I personally appreciate this approach, as the papers have previously benefitted of positive reviews of the experts in the field. However, to provide a more comprehensive overview of the discussed topic, the author included in the thesis "selected fragments of yet unpublished analyses or those currently under preparation".

The contextual framework extending over 36 pages is organized as follows: an *Introduction*, four chapters followed by *Conclusion*, *Acknowledgement*, and *Bibliography*. The chapters are dedicated to *Urban heat island in Central Europe* (Chapter 1), *Remote sensing approach* (Chapter 2), *Thermal comfort in cities and mitigation of the urban heat island effects* (Chapter 3) and *Urban heat island modelling approaches* (Chapter 4).

The publications are organized as 4 appendices and are placed after the contextual framework (Appendix A, Appendix B, Appendix C, and Appendix D).

In the *Introduction*, information about urban heat island concept is presented with some examples developed worldwide. The list of own publication which were the basis of this thesis is presented, too.

Details about the methods and data used as well as results obtained by the author are given in chapters 1-4. Thus, chapter 1 is dedicated to urban heat island detected based on ground observation measurements and chapter 2 considers a modern technique (remote sensing) to detect the same process, but benefitting of a better spatial and time resolution. The impact of urban heat island on thermal comfort is detailed in chapter 3, whilst chapter 4 considers different modelling approaches. The last two chapters can be considered as oriented toward a science for service perspective. The main conclusions of the publications are presented in each chapter. The *Conclusion* chapter summarizes the main findings and provides a brief outlook.



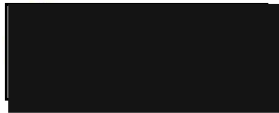
The present thesis demonstrates how classical methods and modern techniques (as remote sensing) can be applied in the detection of the urban heat island, a process largely affecting cities worldwide. At the same time, the publications presented clearly indicates the candidate's contribution in the field, his ability to coordinate research teams (he is the main author of three out of the four papers presented) and to work in joint research projects, which are also specified in the thesis.

The (auto)plagiarism audit (*Turnitin report*) did not indicate scientific misconduct regarding copying.

Based on the content presented, in my opinion, the thesis fulfills the requirements expected for a habilitation.

I, therefore, support and recommend Dr. Michal Žák's Habilitation.

Sincerely yours,



Adina-Eliza CROITORU  
PhD. Professor Habil.

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