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## REVIEW OF HABILITATION THESIS BY JIRÍ MIKŠOVSKÝ

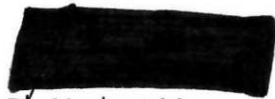
The habilitation thesis contains a collection of published scholarly works on the important topic of analysing meteorological data, in particular on applying nonlinear methods for downscaling and prediction, as well as regression and attribution analysis.

The first chapter provides a very brief overview over the covered topics. The following chapters explain in some detail the research, the approaches and results. However, in general the motivation of the research, the current state of the field, and the open challenges could have been provided in more detail. Nevertheless, the chapters provide the structure of the research and point to the publications of the original work in international, recognised journals.

Chapter 2 discusses the important problems with observation and simulation data (such as downscaling), which is an issue within all studies present in the thesis. The chapters 3 and 4 describe very briefly different regression techniques and predictive mappings which have been applied in the research. The used methods are standard methods of linear and nonlinear data analysis, machine learning and data mining. In chapter 5, regression methods are applied for spatial downscaling and extending spatial data sets. The different methods have been systematically compared. Chapter 6 focuses on the important topic of attribution analysis. The results of this chapter are not only interesting from a methodological point of view (by using nonlinear methods), but

also for the broader discussion in the field of climate change. The final chapter summarises the main findings and provides a brief outlook.

The thesis demonstrates how modern techniques of (non)linear regression and artificial neural network techniques can be applied in the field of statistical meteorology and climatology. Moreover, it clearly indicates the contributions of J. Mikšovský to the field of statistical meteorology and climatology as well as his collaborative base and ability to work in joint research projects. The thesis is well written and does not suffer of presentation issues. The plagiarism audit (Turnitin report) has not shown any serious scientific misconduct regarding copying. The thesis fulfills the requirements expected for a habilitation. I, therefore, recommend that it is accepted by the university.

A black rectangular redaction box covering the signature of Dr. Norbert Marwan.

Dr. Norbert Marwan