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Dear Mgr. Milada Menšíková

This is my evaluation of Dr. Jiri Miksovsky's Habilitation thesis 'Spatiotemporal links and variability in climate time series'. The Habilitations thesis is presented in form of a classical, cumulative work, containing a number of peer-reviewed publications preceded by a contextual framework associating them. I personally appreciate this approach, as the candidate has already received positive reviews from international experts of his contributions to the current body of scientific knowledge that have been published in recognized scientific journals.

The contextual framework that extends over about 40 pages is organized as follows: Chapter 1 provides an introduction; Chapter 2 characterizes data sets that have been used; Chapter 3 briefly introduces employed statistical analysis techniques; Chapters 4 to 6 deal with central fields of Dr. Miksovsky's research (assessment of non-linearity within climate variability; derivation of spatial relations with a particular focus on statistical downscaling and interpolation of climate data; statistical attribution analysis); Chapter 7 contains concluding remarks.

Thus, Dr. Jiri Miksovsky dedicates his thesis largely to the demonstration of the advantages and disadvantages associated with the application of linear and non-linear statistical techniques simulating links between predictors and predictands within the climate system as well as their response to climate forcings and large-scale circulation pattern. Particular focus

has been devoted to the quantification of non-linearity in time series, the use of non-linear functions in statistical downscaling and findings attained with statistical attribution analysis.

This research is of significance. It not just highlights the substantial variety of scientific problems that can be addressed via statistical techniques, but also carefully points out difficulties arising from the process of determining the extent to which non-linear methods offer improvements over linear techniques or vice versa.

While in case of low-dimensional linkages between predictors and predictands the usage of non-linear methods did not yield enhancements as compared to linear approaches, they show some superiority concerning multi-predictor regression setups and short-term predictions. Since, however, the latter finding depends on which test configuration has been employed, the identification of problems suitable for the application of non-linear techniques remains challenging and needs to be decided individually based on the research-question to be solved.

Regarding attribution-seeking analyses, linking the temporal behavior of climate variables (e.g. temperature, precipitation) to different forcings and large-scale circulation modes, no significant gain induced by non-linear mappings could have been detected.

In my opinion the Habilitation thesis submitted by Dr. Jiri Miksovsky meets (and exceeds) all criteria necessary for acceptance. The work is well written and the results achieved represent valuable contributions to the development of atmospheric and climate science. Dr. Jiri Miksovsky's research papers have been published in a number of renown international journals. The plagiarism audit (Turnitin report) has not shown any serious scientific misconduct regarding copying

I, therefore, support and recommend Dr. Jiri Miksovsky's Habilitation.

Sincerely yours,

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