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An interesting title about, EOF, Wind, Humidity and Climate

Masterarbeit

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ABSTRACT

Scientific documents often use L^AT_EX for typesetting. While numerous packages and templates exist, it makes sense to create a new one. Just because.

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1 PRELIMINARIES

2 PROBLEM ANALYSIS

3 RELATED WORK

This an example [or it should be] *BLUBB*

- Some information

3.1 CLIMATE SIMULATION DATASETS

General infos from [\[1\]](#):

-

3.1.1 RCP SCENARIOS

3.1.2 QUESTIONS ARISING ABOUT USING CLIMATE SIMULATION DATASETS

- How many ensemble members are needed for a correct assessment?
- How to sort them out? Random?
-

3.1.3 MPI-GE - THE MAX PLANCK INSTITUTE GRAND ENSEMBLE

In [\[1\]](#) there is much inforamtion available:

3.1.4 CMIP5 - COUPLED MODEL INTERCOMPARISON PROJECT

In [\[2\]](#)

3.2 PRECIPITATION LITERATURE

3.2.1 SAISONALITY IN PRECIPITATION VARIABILITY

The work of Zveryaev

4 DESIGN

5 EVALUATION

6 CONCLUSIONS AND FUTURE WORK

6.1 CONCLUSIONS

6.2 FUTURE WORK

ACRONYMS

PCA	Principal component analysis
SNF	Smith normal form
TDA	Topological data analysis

GLOSSARY

\LaTeX	A document preparation system
\mathbb{R}	The set of real numbers

BIBLIOGRAPHY

1. N. Maher, S. Milinski, L. Suarez-Gutierrez, M. Botzet, M. Dobrynin, L. Kornbluh, J. Kröger, Y. Takano, R. Ghosh, C. Hedemann, C. Li, H. Li, E. Manzini, D. Notz, D. Putrasahan, L. Boysen, M. Claussen, T. Ilyina, D. Olonscheck, T. Raddatz, B. Stevens, and J. Marotzke. “The Max Planck Institute Grand Ensemble: Enabling the Exploration of Climate System Variability”. *Journal of Advances in Modeling Earth Systems* 11:7, 2019, pp. 2050–2069. DOI: <https://doi.org/10.1029/2019MS001639>. eprint: <https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/2019MS001639>. URL: <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2019MS001639>.
2. K.E. Taylor, R.J. Stouffer, and G.A. Meehl. “An overview of CMIP5 and the experiment design”. *Bulletin of the American meteorological Society* 93:4, 2012, pp. 485–498.
3. I.I. Zveryaev. “Seasonality in precipitation variability over Europe”. *Journal of Geophysical Research: Atmospheres* 109:D5, 2004. DOI: <https://doi.org/10.1029/2003JD003668>. eprint: <https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/2003JD003668>. URL: <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2003JD003668>.