Universität Leipzig

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

Masterarbeit

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vorgelegt von

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Abstract

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

Contents

1 Preliminaries

2 Problem Analysis

3 Related Work

3.1 Climate simulation datasets

General infos from [4]:

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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?
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3.1.3 MPI-GE - The Max Planck Institute grand Ensemble

In [4] theere is much inforamtion available:

3.1.4 CMIP5 - Coupled Model Intercomparison Project

In [5]

3.2 Precipitation Literature

3.2.1 Saisonality in Precipitation variability

The work of Zveryaev

3.3 Means of moisture transport

3.3.1 vertically integrated water vapor transport

As proposed by Zhu and Newell in [6], one way of measuring moisture (p) transport is by vertically integrating over the different pressure levels the zonal and meridional fluxes $\overline{pu}$ and $\overline{pv}$.

An example of using this method can be found in [1] with many more references why this method is working well for these kinds of approaches. Also this paper lists some other methods of moisture transportation which are also used:

1. integrated water vapor distributions (see [2])
2. the lagrangian approach
3. stable oxygen isotope investigation

3.4 Pattern analysis

3.4.1 Empirical Orthogonal Functions

See [3] for a big overview of EOF in atmospheric science.

See [1] for an similar approach as we plan it, except it only focuses on the past

4 Design

5 Evaluation

6 Conclusions and Future Work

6.1 Conclusions

6.2 Future Work

Bibliography

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