

Martin Bergemann, PhD

Scientific Programmer



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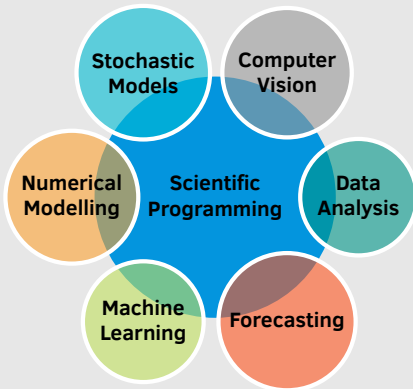


antarcticrainforest.github.io



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Interests



Programming

- **Python**, scikit-learn keras pandas plotly
- **Fortran**, openMP MPI netCDF
- **C/C++**, HDF5 netCDF MPI
- **Bash**, Lua
- **R**
- **Matlab**
- **IDL/GDL**
- **Html/PhP/Css**

Languages

German

English

Spanish

Research/Experience

- since 2018 **Post-Doctoral Research Fellow** University of Melbourne, Melbourne, Australia
- Investigation of Extreme Rainfall events and High Impact Weather by applying Machine Learning algorithms to observational data and using high resolution cloud system resolving models.
- 2017 **Post-Doctoral Research Fellow** Monash University, Melbourne, Australia
- Developed the first of its kind model of sub-grid scale sea-breeze circulation systems for application in global climate and numerical weather prediction models.
- 2014-2016 **Research Associate** Monash University, Melbourne Australia
- Applied and improved a 3D variational assimilation technique, that can be applied to force cloud resolving or single column model simulations.
- 2013-2016 **PhD-Studentship** Monash University, Melbourne Australia
- Developed an objective pattern recognition technique to identify tropical rainfall caused by land-sea interaction.
 - Developed a stochastic parametrization approach that is able to capture the main characteristics of coastal convection.
- 2012-2013 **Research Fellow** Freie Universität, Berlin, Germany
- Simulated and investigated regional African climate change caused by mountain uplift during the Miocene period 14 - 7 Ma BP.
- 2008-2011 **Junior IT-System Admin** Freie Universität, Berlin, Germany
- Developed small software solutions for maintenance of the Institute of Meteorology's computer pool.

Education

- 2013 - 2016 **PhD, Atmospheric Physics** Monash University, Melbourne Australia
supervisors: Prof. Christian Jakob and A-Prof. Todd P. Lane
Thesis: Coastal Convection in the Tropics
- 2004 - 2011 **German Diplom (MSc) in Meteorology** Freie Universität, Berlin
Minors in Physics and Mathematics
Thesis: Last inter-glacial vegetation simulation in northern Asia: A parametrization approach and a data model comparison

Publications

- 2017 **M. Bergemann, B. Khouider, C. Jakob**
Coastal Tropical Convection in a Stochastic Modeling Framework - *Journal of Advances in Modeling Earth Systems* (DOI: 10.1002/2017MS001048)
- 2016 **M. Bergemann, & C. Jakob**
How important is tropospheric humidity for coastal rainfall in the tropics? - *Geophysical Research Letters*, Vol. 43/11 (DOI: 10.1002/2016GL069255)
- 2015 **M. Bergemann, C. Jakob, T. P. Lane**
Global Detection and Analysis of Coastline-Associated Rainfall Using an Objective Pattern Recognition Technique - *Journal of Climate* Vol. 28/18 (DOI: 10.1175/JCLI-D-15-0098.1)
- 2014 **M. Bergemann & S. Müller**
Last interglacial vegetation in northern Asia: Model simulations and comparison with pollen-based reconstructions - *Quaternary International* Vol. 384 (DOI: 10.1016/j.quaint.2013.10.041)