Martin Bergemann, PhD

Scientific Programmer

Melbourne, Aus

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antarcticrainforest.github.io

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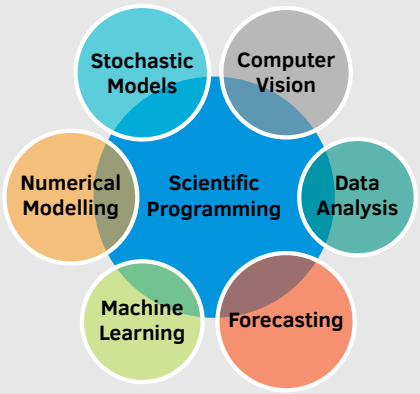
Interests



Programming

- **Python**, scikit-learn keras pandas plotly
- **Fortran**, openMP MPI netCDF
- **C/C++**, HDF5 netCDF MPI
- **Bash, Lua** MySQL LDAP
- **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)*