Climate change and adaptive land management in southern Africa
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Klaus Hess Publishers
Göttingen & Windhoek
www.k-hess-verlag.de

ISBN: 978-3-933117-95-3 (Germany), 978-99916-57-43-1 (Namibia)

Language editing: Will Simonson (Cambridge), and Proofreading Pal
Translation of abstracts to Portuguese: Ana Filipa Guerra Silva Gomes da Piedade
Page desing & layout: Marit Arnold, Klaus A. Hess, Ria Henning-Lohmann
Cover photographs:
   front: Thunderstorm approaching a village on the Angolan Central Plateau (Rasmus Revermann)
   back: Fire in the miombo woodlands, Zambia (David Parduhn)
Cover Design: Ria Henning-Lohmann

ISSN 1613-9801

Printed in Germany

Suggestion for citations:
Volume:

Articles (example):

Corrections brought to our attention will be published at the following location:
http://www.biodiversity-plants.de/biodivers_ecol/biodivers_ecol.php
Biodiversity & Ecology

Journal of the Division Biodiversity, Evolution and Ecology of Plants, Institute for Plant Science and Microbiology, University of Hamburg

Volume 6:

Climate change and adaptive land management in southern Africa

Assessments, changes, challenges, and solutions

Edited by

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Hamburg 2018
Please cite the article as follows:

Gridded maps of climate data for southern Africa

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Interpolation of meteorological data from SASSCAL-WeatherNet (Muche et al., 2018) observational land surface stations provides additional information for a data-sparse region. As an application example, different spatial interpolation methods for maximum and minimum temperature have been tested to produce a gridded dataset for the SASSCAL region. We tested the interpolation for the time period of September 2014 to August 2016, as this period had the highest availability of observational temperature data. The best interpolation was achieved by combining multiple linear regression (elevation, a continentality index, and latitude as predictors) with three-dimensional inverse distance weighting (Eiselt et al., 2017).

Figure 1: Application example for the month of January 2016, with a three-dimensional interpolation of minimum temperature (Tmin, left) and maximum temperature (Tmax, right). The best predictors of the model were elevation, continentality index, and latitude. The locations of the AWS of SASSCAL are indicated by circles.

References: