Review
Daniel S. Wilks' book *Statistical Methods in the Atmospheric Sciences* (3rd Edition)

This book is an introduction to the *application* of statistical methods to atmospheric data. Every edition of *Statistical Methods in the Atmospheric Sciences* has been quite relevant to contemporary analysis of observed and modelled atmospheric data, but the book assumes that the reader has completed some introductory course, or has a working knowledge, in statistics. On the other hand, although I highly recommend this book to all atmospheric scientists, more complete and advanced texts than what this book offers may be what are required by professional statisticians.

During the course of my work on statistical weather and climate modelling, I have made extensive use of the book. In particular, I have referred to the book for the application of post-processing methods for weather and seasonal forecast downscaling, statistical downscaling of climate change projections, parametric and non-parametric tests, Monte Carlo techniques, multiplicity and field significance, probability distributions, return period calculation, forecast verification, hypothesis testing, linear regression, principal component analysis/regression and canonical correlation analysis. These topics cover only about a 1/4 of the content of a three-part book on statistics and probabilities, univariate as well as multivariate statistics. The book also covers topics such as Bayesian techniques, non-linear regression, ensemble forecasting, a chapter devoted to time series analysis, the multivariate normal distribution, discrimination and classification, and cluster analysis.

The book includes excellent practical examples and example data sets, numerous illustrations, exercises (and their solutions as an appendix), probability tables, comprehensive equations, and many pages of references. Overall, this is an excellent text book that can benefit both lecturers/supervisors and their students (likely to be best used from Honours level and up) in the atmospheric sciences in South Africa.

The book is available on Kalahari.com in both hardcover (R1212-00) and as an eBook (R1059-00). The 2nd and 1st editions are also still available. Although this book is expensive, I consider this book of such importance to my work (for both research and teaching) that I bought my own copy of the 3rd Edition the same day I heard it was released on Amazon, and am already saving for a possible 4th Edition that will in all likelihood not only expand on the material of the current issue but may also introduce additional relevant statistical methods in contemporary atmospheric science.

Reviewed by Willem A. Landman

Review
'The State of Green Technologies in South Africa' November 2014 Report

Green technologies encompass an evolving group of products, services and systems that aim to sustain green production and consumption processes. Renewable energy technologies, green buildings, and pollution prevention and abatement technologies are examples of green technologies. Commissioned by the Department of Science and Technology and carried out by the Academy of Science of South Africa (ASSAf), a consensus panel was convened to prepare this report on the state of green technologies in South Africa. The panel's tasks were to document the green technologies presently being used in South Africa; to identify gaps and opportunities where green technologies could be applied; and to recommend ways to promote the growth of green technologies.

In a 236-page report comprising 10 chapters, the panel provides comprehensive answers to these three overarching objectives. The panel found that while South Africa's policy environment is favourable for the adoption of green technologies, in general, South Africa's uptake of green technologies is below average when compared to other countries. Compared to the other sectors in the country, only in the energy sector has there been some uptake of green technologies. In the energy sector, co-benefits of green technology implementation would be air pollution reduction, for example, through point-source air pollution control, uptake of clean cookstove technology, and introduction of electric vehicles. Adoption of alternate renewable energy options such as solar and wind would also contribute to a reduction in ambient air pollution, and ultimately help to improve air quality-related adverse health outcomes.

Several barriers that inhibit innovation and prohibit effective implementation and uptake of green technologies are discussed in the report. These include, amongst others, institutional challenges, government bureaucracy, lack of political will, skills shortages, financial barriers, and human behaviour. In light of these barriers, challenges and opportunities garnered from local and international experience, the final chapter provides nine recommendations aimed at promoting implementation and development of green technologies in South Africa. Cognisant of the roles of business, government and society, the recommendations support the idea that green growth is necessary to grow South Africa's economy. Well written for a general audience, the report is an inclusive document of value to policy-makers, practitioners and researchers alike.

Publisher: Academy of Science of South Africa
Reviewed by Caradee Wright and Linda Godfrey