

Reviews

Empirical Methods in Short-term Climate Prediction.

By HUUIG VAN DEN DOOL

Oxford: Oxford University Press, 2007, 215 pp, notes, refs and index, £55.00 (hardback) ISBN 0-19-920278-8

It is a commonsense assertion that the science of climate prediction is as dynamic as the computing technology that drives the myriad climate models throughout the world. Most of the few previous texts relating to climate prediction have tended to be self-constrained to the somewhat dry physics and theory accumulated over the past 50 years. This book, however, is a refreshing departure from these bloated tomes, as it tells the reader what they *need* to know and *why*. It is also aimed at statistical rather than numerical (NWP) approaches, which is more widely applicable to the general reader, not least because the author echoes the sentiments of many who work in the field that modern dynamical coupled models are little better than more traditional statistical approaches. The book has (as one might expect) an excellent foreword by the great Edward N. Lorenz but also indulges in an introductory chapter well worth reading for its historical overview. Each of the main chapters then builds towards those which later deal specifically with prediction methods and the practice of prediction. This is an important and pleasing aspect of the book, dealing with the theory in a gentle uphill slope so as to keep the reader engaged and also to help convey the justification for their inclusion. Only when the reader has been gently led through the minefield of such topics as orthogonal functions, wave propagation, teleconnections, empirical orthogonal functions, degrees of freedom and analogues is the main subject matter dealt with. This approach by the author makes *how* and *why* these theories and empirical methods are used far more easily understood. The methods chapter uses the same gentle learning curve to introduce initial topics such as climatology and persistence before dealing with practical techniques such as regression, CCA, SVD, LIM, Markov etc. and even giving an overview of less known methods. The final empirical chapter actually deals with the practice of short-term prediction. Unlike so many other authors, van den Dool has been both critical and honest about why certain practices are undertaken but also provides

justification for them in the analysis. Importantly, the use and implementation of forecast verification is also provided. Overall this is a great book and with many clear and well produced diagrams serves to make the seemingly complex nature of climate prediction much easier to understand. Every student and practitioner of climate prediction should have a copy on their desk.

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Globalization of Water: Sharing the Planet's Freshwater Resources. By ARIEN Y HOEKSTRA AND ASHOK K CHAPAGAIN

Oxford: Blackwell, 2008, 208 pp including bibliographical references and index, £29.99 (hardback) ISBN 978-1-4051-6335-4

The title and back cover summary for the *Globalization of Water* are perhaps a little misleading in suggesting that the subject matter of the book is broader than it actually is. As the authors suggest, the scope of the book is not broad enough to pass value judgements on the efficiency of the trade in water-consuming goods because it does not consider factors such as water use efficiency, production energy demands, or political factors. What it does do is provide an impartial, logical and enjoyable explanation of the importance of considering water resources management at a global scale, and details precise and carefully thought out environmental economic concepts and tools that allow the quantification and analysis of the global water trade. Specifically, it deals with three key concepts: the 'virtual-water content' of a product, which is the volume of fresh water that was used to produce the product in the country of origin; the 'water footprint' of an individual or community, which is the total volume of freshwater that is used to produce the products used by that individual or community; and the national or global 'water saving' associated with trade in a product between one or more nations. It uses these concepts to study the global trade in 'virtual water' and uses several case studies to illustrate the flexibility and usefulness of them. It concludes with the germs of a discussion of the important implications of the book's findings for the sustainable use of global water resources and highlights ways in which the