Proceedings of the Institution of Civil Engineers
Water Management 163
April 2010 Issue WM4
Page 216
doi: 10.1680/wama.2010.163.4.216

Paper 800117

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Institution of Civil Engineers

Book review

PRINCIPLES OF SNOW HYDROLOGY

D. R. DeWalle and A. Rango. Cambridge University Press, 2008. ISBN-13-978-0521823623, £90, 420 pp.

The first few words of this book sum it up perfectly: 'Snow hydrology is a specialized field of hydrology.'

This is very definitely a book for specialists and for those with a USA bent on the subject, for most of the cases and citations given are of that origin. That is not to say that the material included is in any way inappropriate – just that there is a distinctly US 'feel' to the book, which might beneficially have been balanced and diluted by the inclusion of material from other parts of the world (or by the judicious addition of a subtitle denoting the adoption of an American perspective). The bias reflects the origin of the material included, being shaped by the authors' own work and experiences and the contents of upper-level undergraduate and post-graduate courses given by them in their home country. Everyone likes to have material and case studies from close to home; but that applies to readers from a worldwide audience too.

That mild concern apart, readers with an interest or need in any aspect of snowfall, snow accumulation, snow transformation and snow melt will find what they need within this highly detailed book. The specialist 'snow hydrologist' will delight in the degree and depth of detail provided, both theoretical and empirical. A more general hydrologist will also find what he/she might need in the way of understanding how hydrological processes and fluxes differ in catchments with a snowfall–snowmelt component – although with a modicum of effort, in extracting key facts and central issues from the detail provided.

So, does this book provide an everyman's point of reference on snow hydrology? Almost, but not quite; the notable omission is the lack of any meaningful coverage of snow hydrology in ice-covered catchments. These constitute a not insubstantial part of the global land mass and might reasonably be regarded as of central importance for consideration in times of climate instability and change.

The above concerns aside, this is a fine book. It is well written and well illustrated (extending to the welcome inclusion of a section of colour plates, which make interpretation of distribution maps so much easier and rewarding), and it is laudably free from errors. The contents are scientifically spot on and well-pitched to the target audience, and they are comprehensive and well ordered, in the main, with the chapter on snowmelt chemistry alone constituting something of a cul-de-sac on an otherwise direct and unswerving route map that covers the life history of snow from snowflake to streamflow. I would argue the need for the inclusion in any second edition of chapters on snow hydrology on glaciers and ice sheets, and in glacierised catchments. But maybe I am showing my own bias. We all have one, to a greater or lesser extent.

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