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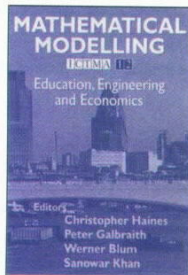
Mathematical Modelling ICTMA 12: Education, Engineering and Economics

Editors: C. Haines, P. Galbraith, W.
Blum, and S. Khan

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Everyone reading this magazine has a vested interest in the education of future mathematical modellers. Indeed, this interest extends beyond our professional boundaries into our private lives, since such a significant proportion of the economy rests on technologies and industries which are dependent on mathematical modelling for their viability and profit margins. The role of modelling in industry and finance, the art of modelling and how it can be modelled, exemplars of teaching modelling, and examples of modelling itself are all contained in this collection of papers presented at the Twelfth International Conference on the Teaching of Mathematical Modelling and Applications (ICTMA 12) held at City University, London, in 2005.

The standard of the papers seems very high overall, and there is much to be gleaned by anyone involved in education or training. By breaking the papers into themed sections along the lines mentioned above, the reader is quickly able to hone in on material relevant to a given need. Looking for examples of teaching modelling in school classrooms? How about running modelling



competitions for undergraduates? Are you interested in the industry point of view, perhaps wondering what skills and competencies industrialists wish to see in the mathematically-literate people they hire? Maybe you have an interest in the cognitive aspects of modelling, and the role of the teacher-student dynamic. Or perhaps you would simply like to see some (many, in fact) examples of modelling in action. All this and much more can be found in this book.

Indeed, the editors and organisers of the conference have obviously striven to ensure that both educational aspects and modelling issues are represented. After all, one of the main reasons for conferences such as this is to address the question of how best to prepare mathematics undergraduates for life "out there" where they will often be asked to solve poorly-defined problems initially stated in non-mathematical language. Conveying the subtleties of this art can only be done by those with experience of it, and so those best able to speak to the question of education and training are often those with lots of modelling experience. This is clear in the book, which I imagine will be the kind of resource one can return to in different moods, be you hankering for some gritty modelling problems or worrying about how to encourage your students.

The two papers with which the collection opens also make good general reading. Julian Hunt, a familiar name to anyone in the business, writes a thoughtful piece outlining the big issues of mathematical modelling - predictability, accuracy, extreme values, singular events, and patterns in system behaviour - and the impact they can have on decisions in industry, finance, and government. Although aimed principally at educators, this well-referenced paper could itself serve as an excellent summary for any new graduate student (and perhaps good revision and ego-deflation for the rest of us). Following on with the idea of broad-brush assessments of the impact and importance of modelling, Kate Barker discusses issues arising from the use of economic models, from her perspective as a member of the Monetary Policy Committee of the Bank of England. Together, the papers of Hunt and Barker provide an overview of the importance of and limitations to the modelling enterprise, which will set the scene for the detailed and more specific papers which follow.

The book is well-produced, with clear typesetting and high-quality black and white figures. Care has obviously been taken with the editing, and with the arrangement of papers into thematic sections. The breadth of subject matter, and the quality of the papers is impressive, which leads me to my closing remark. It is standard in a book review to balance praise with criticism (or vitriol with honey if you don't like the book), but that becomes a little tricky when you think the book highly praiseworthy. So I will end with the best criticism I can come up with: there is so much of worth here that you will have to return to the book time and time again. □

Phil Wilson MIMA

Department of Mathematics and Statistics,
University of Canterbury, New Zealand