footnotes and referencing for the professionals. Some of the illustrations are familiar, but there are many original images, including the exquisite pencil drawings of Mesozoic mammals by Maria Gonzalez. If like me you had filed the KT event away in your mind as 'impact and nothing else', this book will remind you that the case is much more complex.

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GERYA, T. 2010. *Introduction to Numerical Geodynamic Modelling*. xvii + 345. Cambridge University Press. Price £40.00, US$70.00 (HB). ISBN 978 0 521 88754 0.
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In terms of popularity, geodynamics is a relatively new area of the Earth Sciences that is concerned with understanding the mostly large-scale processes occurring within the Earth's interior, such as heat generation and transfer, isostasy, mantle convection, faulting, etc. This new textbook by Taras Gerya attempts to provide 'a practical, hands-on introduction to numerical geodynamic modelling for inexperienced people'. This point is emphasised within the introduction section to the book, which prepares the reader for the emphasis on numerical modelling that underpins a large part of geodynamics. In particular, the author presents his seven 'Golden Rules' that readers are advised to follow in order to develop their skills in the use of numerical modelling techniques.

The main part of the textbook is structured into seventeen relatively short chapters that provide the reader with an understanding of important geodynamic concepts and processes, including stress and strain, rock rheology, and heat conservation. Due to the nature of the subject, all chapters are dominated by equations, but these are explained clearly in terms of the input parameters and examples are provided to illustrate their relevance to geological and geodynamic phenomena. For example, in Chapter 2 there is coverage of how density varies according to mineral composition under different pressure and temperature conditions. Additionally, the book has been written to promote a hands-on approach with all of the main chapters ending with analytical and programming exercises. The latter require the use of MATLAB software, with solutions to the exercises provided online. Although not all readers will have access to MATLAB, there is sufficient information provided for completion of the exercises using other software/programming environments.

Apart from chapters that focus on geodynamic processes, others place emphasis on the development of numerical modelling methods and algorithms. Much of the numerical modelling within geodynamics is based on partial differential equations, therefore coverage is provided (Chapter 3) of how to solve these equations using analytical solutions and more complex numerical methods based on the finite difference technique.

It is difficult not to make comparisons between this textbook and Turcotte & Schubert (2002). Although there is overlap in content between the two books, Gerya places a lot more emphasis on the derivation of equations and their conversion into geodynamic modelling code, whereas Turcotte & Schubert's volume focuses more on geodynamic concepts. Both textbooks complement each other very well.

In summary, Taras Gerya's textbook manages to combine coverage of geodynamic concepts with numerical modelling theory. The book is not written for subject experts but, equally, it will not provide a 'magic solution' to understanding geodynamics for the beginner and, as the author indicates, readers will have to apply some patience and motivation if they are going to understand the material presented. The book is written in a light and engaging style such that it deserves a place on the recommended reading list of any undergraduate or Masters course that includes geodynamics. Additionally, it will be a valuable resource for any geoscientist who wants to include geodynamic modelling within their research activities.

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Reference

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