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Diverging plates the book gives a valuable perspective on the development of plate tectonics, earthquakes and their implications for society

Coming together, splitting apart

Luca Dal Zilio is impressed with an insider's account of the science behind earthquakes

Plate Tectonics and Great Earthquakes: 50 Years of Earth-Shaking Events
By Lynn R. Sykes
Columbia University Press, 272pp, £27.00
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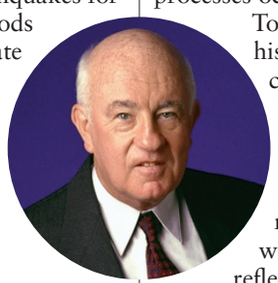
This book is an essential insider's guide to plate tectonics, earthquakes and their implications for society. It highlights the appalling reality of the threat to the growing international populations that are exposed to earthquakes, especially those concentrated in vulnerable megacities. Recent calamities such as the 2011 Tohoku earthquake, tsunami and nuclear disaster are simply foretastes of what is to come, unless decisive action is taken.

Plate Tectonics and Great Earthquakes is written by someone perhaps uniquely qualified to do so: an earthquake scientist whose long and personal engagement with the many seismically active regions he writes about is accompanied by an extremely well-informed, up-to-date and widely respected grasp of his subject. Lynn R. Sykes (pictured inset) is in fact a pioneer in the field of seismology and geophysics. He entered the field when it was on the cusp of radical discoveries. He played a key role in the birth of plate tectonics, conducting revelatory research on earthquakes. By studying the distribution and mechanisms of earthquakes, he pioneered the identification of seismic gaps – regions that have not been ruptured by major earthquakes for a long time – and methods that enable us to estimate the possibility of quake recurrence.



I have been involved in plate tectonics and earthquakes over recent years, but this book gave me a new way of looking at them. It provides a detailed yet simple introduction to all the author's own research in this area. It is written in an easy semi-popular, non-technical style that will make it accessible to non-specialists, yet with the completely convincing authority and balance that are signs of someone who is utterly confident and secure in his knowledge. The examples are carefully chosen to allow the reader to explore how earthquakes and societal responses to them can make their hazards catastrophic. Most important, this book gives a precious perspective on the development of the theory of plate tectonics and its implications by putting into layman's terms just how and why these natural processes occur.

To add to the appeal of his writing, Sykes creates a compelling mix by combining lucid explanations of how plate tectonics and earthquakes revolutionised geology with unusual personal reflections, anecdotes and stories of colleagues. It is an impressive achievement to distil decades of global scientific effort into such a gripping narrative and call to action. Anyone interested in earthquakes and natural hazard science will enjoy reading *Plate Tectonics and Great Earthquakes* and will gain new insights, even on topics they are familiar with.

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