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[Seismic Attributes for Prospect Identification and Reservoir Characterization](#), by S. Chopra and K. J. Marfurt, ISBN 0-931830-41-9, 2007, SEG, Geophysical Developments Series, 464 p.

The latest volume in SEG's Geophysical Developments series (which deals with emerging technologies) is another handsome production by two established authors, Satinder Chopra and Kurt Marfurt. As you would expect from this subject and series and from the caliber of authors involved, the volume is replete with color and contains much detail. Over half the book is devoted to an admirably complete review of the physical and mathematical basis for a huge array of different geometric seismic attributes including a somewhat oddly placed chapter on the influence of data acquisition and processing on the seismic attributes. The second substantial section discusses the application of these attributes—in other words, their use for interpretation and reservoir characterization. Finally, a short (approximately 50 pages) final section reprints several key published case studies in the interpretive use of seismic attributes. The first thing that the authors do is to give a history of the development of seismic attributes for use in interpretation and put this into the wider context of the development of seismic exploration technology. Surprisingly (at least for this reviewer) this is not a tale of increasing acceptance and proliferation of seismic attribute analysis but rather shows that the popularity of attributes has waxed and waned somewhat since their introduction in the 1960s. Of course, the interpretation of many seismic attributes (and volumes such as this) has only been possible due to the development of color plotting and 3D visualization technology; Chopra and Marfurt describe how technological improvements in this area have influenced the acceptance of different attributes. The chapters that follow on the physical basis of different geometric attributes are cleverly set out. Each chapter begins with a set of objectives which guide the reader to exactly what this attribute will give you and ends with a set of relevant references (which saves a selective reader from having to dig around in a larger full volume reference list). These chapters all take a particular set of attributes (for example, volumetric dip and azimuth, coherence or spectral decomposition and wavelet transforms) tell the reader how the attributes are calculated (including a commensurate amount of mathematical detail), what artifacts are likely to be present (always useful!) and the best practices for the use of the attribute in interpretation. In the second section, on the application of attributes during interpretation and reservoir characterization, the same chapter formatting is followed; each chapter discusses a different way in which attributes express a physical feature. These include structural deformation, clastic, carbonate and deepwater depositional environments and the mapping of reservoir heterogeneity. As in all other parts of the volume, these chapters are copiously illustrated with examples from the geophysical literature or directly from industry. As noted above, the set of reprinted case histories that closes the volume is limited (five reprints are included) but they all act as useful summaries of the application of different seismic attributes in real geological settings. I found particularly interesting the discussion of the use of coherency technology for shallow hazard detection. Finally, for those of us constantly swamped in the rising tide of geophysical nomenclature, there is a useful glossary and an epilogue in which the authors note that seismic attribute technology is changing at such a rate that a second edition may be needed at some point in the future. This is a well-presented volume and the authors have done a comprehensive job in describing the state of the art in seismic attributes. I can't imagine that there is a better textbook on this subject in existence, and this book will be useful to anybody who generates, uses or is simply interested in seismic attributes. —JOHN BRITTAN