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Geophysics for the Mineral Exploration Geoscientist

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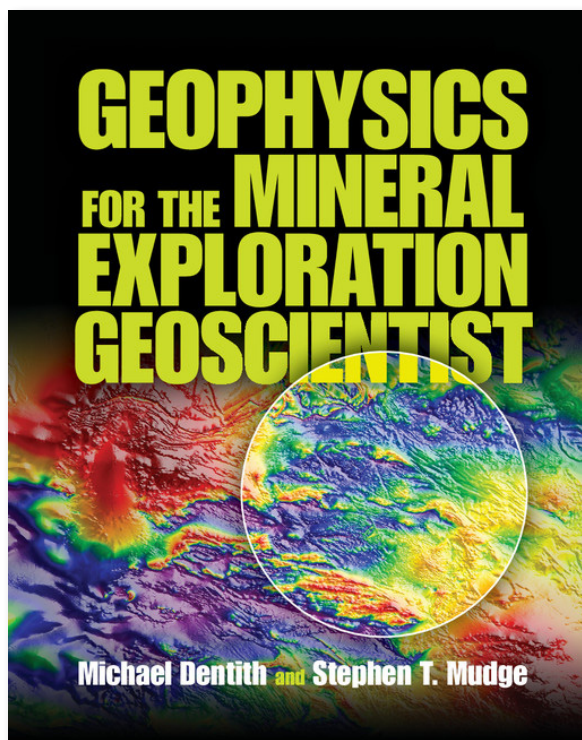
About the Book

Providing a balance between principles and practice, this state-of-the-art overview of geophysical methods takes readers from the basic physical phenomena, through the acquisition and processing of data, to the creation of geological models of the subsurface and data interpretation to find hidden mineral deposits. Detailed descriptions of all the commonly used geophysical methods are given, including gravity, magnetic, radiometric, electrical, electromagnetic and seismic methods. Each technique is described in a consistent way and without complex mathematics. Emphasising extraction of maximum geological information from geophysical data, the book also explains petrophysics, data modelling and common interpretation pitfalls. Packed with full-colour figures, also available online, the text is supported by selected examples from around the world, including all the major deposit types. Designed for advanced undergraduate and graduate courses in minerals geoscience, this is also a valuable reference for professionals in the mining industry wishing to make greater use of geophysical methods.

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Praise for the Book

"More and more, great ore deposits are being found under cover and knowledge of exploration geophysics provides a distinct advantage in their discovery. Dentith and Mudge provide a clear, comprehensive, up to date, and (very significantly) applied approach for the general geologist, demonstrating how to locate concealed orebodies by employing modern-day geophysical techniques."

– **Richard J. Goldfarb, Fellow, Society of Economic Geologists**

"Readers will really appreciate the up-to-date system descriptions, examples and case histories presented ... In particular, the diagrams in this textbook are superb; the explanatory diagrams have been drawn professionally and the geophysical data and images are shown in full colour."

– **Richard Smith, Laurentian University**

Contents

Preface; Acknowledgements; 1. Introduction; 2. Geophysical data acquisition, processing and interpretation; 3. Gravity and magnetic methods; 4. Radiometric method; 5. Electrical and electromagnetic methods; 6. Seismic method; References; Index; Online Appendices: Appendix 1. Vectors; Appendix 2. Waves and wave analysis; Appendix 3. Magnetometric methods; Appendix 4. Magnetotelluric electromagnetic methods; Appendix 5. Radio and radar frequency methods; Appendix 6. Seismic refraction method; Appendix 7. Sources of information on exploration and mining geophysics.