Geophysical imaging methods provide solutions to a wide range of environmental and engineering problems: protection of soil and groundwater from contamination; safe disposal of chemical and nuclear waste; geotechnical site testing for underground vaults, subways, dams, reservoirs and power plants; landslide and ground subsidence hazard detection; location of archaeological artifacts.

After an introductory chapter, this book describes each method of geophysical surveying: gravity, magnetic, seismic, self-potential, resistivity, induced polarization, electromagnetic, ground-probing radar, radioactivity, geothermal, and geophysical borehole logging. A final chapter is devoted to inversion theory and tomography. Each chapter takes the reader from the theory behind the method, through data acquisition and on to interpretation, and is supported by a large number of richly illustrated case histories. The book contains many topics not included in current texts on geophysical exploration. These include microgravimetry, shallow reflection seismic profiling, the generalized reciprocal method (GRM) of interpretation, nuclear magnetic resonance (NMR) and radio-imaging, radon emanometry, cross-hole tomography, and special techniques for fracture and fluid flow detection. There are copious references for those wishing to delve deeper into particular subject areas.

This is an ideal textbook for senior undergraduate and postgraduate courses in environmental and applied geophysics, and a supplementary course-book for students of geology, engineering geophysics, civil and mining engineering. It is also a valuable reference work for professional earth scientists, engineers and town planners.

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