

This radical revision of Professor Bullen's acclaimed and widely used text provides an introduction to modern seismological theory, with emphasis on both the physical models and the mathematical descriptions of earthquakes and their sources.

The essential core of the earlier editions has been retained, particularly the tensor treatment of elasticity, seismic wave travel-time analysis and density in the Earth, although these parts of the text have been brought up to date and expanded. The new part of the book reflects on how the study of earthquakes, seismic waves and seismic risk has been broadened in the past two decades. Thus, this edition includes introductory theory of earthquake sources, seismic wave travel through complex geological zones and viscous and anisotropic media, vibrations of the whole Earth, strong-motion seismology and earthquake prediction and risk. There is an emphasis on statistical and numerical procedures and problems of resolution in inverse theory. Modern class exercises are to be found throughout.

The book assumes some background in classical physics and mathematics, including simple differential equations, linear algebra and probability theory. It will be suitable for use in undergraduate courses in geophysics, applied mechanics and geotechnology and for graduate courses in seismology and earthquake engineering. In addition, it will serve as a reference text on seismological problems for professionals concerned with earthquakes, Earth structure and wave motion.

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