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Nota di contenuto	1. Introduction -- 2. Analysis and Modeling of TL Data -- 3. Analysis of Experimental OSL Data -- 4. Dose Response of Dosimetric Materials -- 5. Monte Carlo Simulations With Fixed Time Interval -- 6. Luminescence as a Stochastic Life-and-Death Process -- 7. Delocalized Transitions: The R Package RLumCarlo -- 8. Localized Transitions: The R Package RLumCarlo -- 9. Quantum Tunneling and Luminescence Models -- 10. Quantum Tunneling: The R Package RLumCarlo -- 11. Comprehensive Quartz Models Using Program KMS -- 12. Quartz Models Using the R-Package RLumModel.
Sommario/riassunto	This book covers applications of R to the general discipline of radiation dosimetry and to the specific areas of luminescence dosimetry, luminescence dating, and radiation protection dosimetry. It features more than 90 detailed worked examples of R code fully integrated into the text, with extensive annotations. The book shows how researchers can use available R packages to analyze their experimental data, and how to extract the various parameters describing mathematically the luminescence signals. In each chapter, the theory behind the subject is summarized, and references are given from the literature, so that researchers can look up the details of the theory and the relevant experiments. Several chapters are dedicated to Monte Carlo methods,

which are used to simulate the luminescence processes during the irradiation, heating, and optical stimulation of solids, for a wide variety of materials. This book will be useful to those who use the tools of luminescence dosimetry, including physicists, geologists, archaeologists, and for all researchers who use radiation in their research.