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| Nota di contenuto | Preface -- Part I: Scientific Chapters -- Chapter 1: Spatial Audio and Room Acoustics -- Chapter 2: The Early History of Ray Tracing in Acoustics -- Chapter 3: Advanced Room-Acoustics Decay Analysis -- Chapter 4: Estimating the cross-over time within room impulse responses -- Chapter 5: Are impulse responses Gaussian noises? -- Chapter 6: Recent applications of number-theoretic sequences in audio and acoustics -- Chapter 7: Where mathematics and hearing science |

meet: Low peak factor signals and their role in hearing research -- Chapter 8: Neurally-based acoustic and visual design -- Chapter 9: Manfred R. Schroeder: A personal memoir, Optimizing the reflection phase grating -- Chapter 10: Manfred R. Schroeder: Challenge the present and there is a better way -- Chapter 11: Transducer Research at Bell Laboratories under Manfred Schroeder -- Chapter 12: Manfred Schroeder and Acoustical Impedance -- Chapter 13: Research on Underwater Acoustics in Göttingen -- Part II: The Memoirs of Manfred R. Schroeder -- Chapter 14: Right Turns -- Chapter 15: School Years -- Chapter 16: July 1943 -- Chapter 17: Radar -- Chapter 18: Lucky Breaks -- Chapter 19: The University of Göttingen -- Chapter 20: Bell Laboratories -- Chapter 21: The KGB -- Chapter 22: Professor of Physics -- Chapter 23: The German Language -- Chapter 24: Retirement and Beyond -- Chapter 25: The Year 2006 -- Appendix: Bibliography of Manfred R. Schroeder's Publications -- Index.

Sommario/riassunto

This book explores the life and scientific legacy of Manfred Schroeder through personal reflections, scientific essays, and Schroeder's own memoirs. Reflecting the wide range of Schroeder's activities, the first part of the book contains thirteen articles written by his colleagues and former students. Topics discussed include his early, pioneering contributions to the understanding of statistical room acoustics and to the measurement of reverberation time; his introduction of digital signal processing methods into acoustics; his use of ray tracing methods to study sound decay in rooms; and his achievements in echo and feedback suppression and in noise reduction. Other chapters cover his seminal research in speech processing including the use of predictive coding to reduce audio bandwidth which led to various code-excited linear prediction schemes, today used extensively for speech coding. Several chapters discuss Schroeder's work in low-peak factor signals, number theory, and maximum-length sequences with key applications in hearing research, diffraction gratings, artificial reverberators, and de-correlation techniques for enhancing subjective envelopment in surround sound. In style, the articles range from truly scientific to conversationally personal. In all contributions, the relationship between the current research presented and Manfred Schroeder's own fields of interest is, in general, evident. The second part of the book consists of Schroeder's own memoirs, written over the final decade of his life. These recollections shed light on many aspects not only of Schroeder's life but also on that of many of his colleagues, friends, and contemporaries. They portray political, social, and scientific events over a period that extends from pre-war to the present. These memoirs, written in an inimitable and witty style, are full of information, entertaining, and fun to read, providing key insight into the life and work of one of the greatest acousticians of the 20th century. Reflects on the life, work, and legacy of one of the greatest acousticians of the 20th century Features articles by leading researchers on the implications of Schroeder's research today Covers a wide range of topics, from room acoustics, noise reduction, physical acoustics, and underwater acoustics to transducers, speech signal processing, and number-theory applications.
