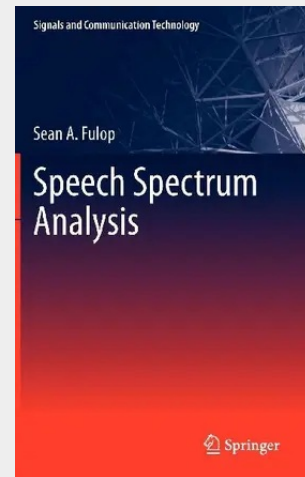


Speech Spectrum Analysis

The accurate determination of the speech spectrum, particularly for short frames, is commonly pursued in diverse areas including speech processing, recognition, and acoustic phonetics. With this book the author makes the subject of spectrum analysis understandable to a wide audience, including those with a solid background in general signal processing and those without such background. In keeping with these goals, this is not a book that replaces or attempts to cover the material found in a general signal processing textbook. Some essential signal processing concepts are presented in the first chapter, but even there the concepts are presented in a generally understandable fashion as far as is possible. Throughout the book, the focus is on applications to speech analysis; mathematical theory is provided for completeness, but these developments are set off in boxes for the benefit of those readers with sufficient background. Other readers may proceed through the main text, where the key results and applications will be presented in general heuristic terms, and illustrated with software routines and practical "show-and-tell" discussions of the results. At some points, the book refers to and uses the implementations in the Praat speech analysis software package, which has the advantages that it is used by many scientists around the world, and it is free and open source software. At other points, special software routines have been developed and made available to complement the book, and these are provided in the Matlab programming language. If the reader has the basic Matlab package, he/she will be able to immediately implement the programs in that platform---no extra "toolboxes" are required.

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