1. Record Nr.   UNINA9910829808803321

   Titolo   Advanced methods of biomedical signal processing / / edited by Sergio
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   Pubbl/distr/stampa Piscataway, New Jersey : , : IEEE Press, , c2011
                      [Piscataqay, New Jersey] : , : IEEE Xplore, , [2011]

   ISBN   1-118-00774-3
                      1-118-00773-5
                      1-283-27367-5
                      9786613273673
                      1-118-00772-7

   Descrizione fisica 1 online resource (606 p.)

   Collana   IEEE press series on biomedical engineering ; ; 27

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                      MarchesiCarlo

   Disciplina   610.28

   Soggetti   Signal processing
                      Biomedical engineering

   Lingua di pubblicazione Inglese

   Formato   Materiale a stampa

   Livello bibliografico Monografia

   Note generali   Description based upon print version of record.

   Nota di bibliografia Includes bibliographical references and index.

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Sommario/riassunto	A complete introduction to the application of advanced signal processing methods to biomedical engineering problemsThis edited volume, which grew out of the GNB (Gruppo Nazionale di Bioingegneria, Italy) Summer School on Biomedical Signal Processing, explains some of the most advanced methodological signal processing techniques and applies them to biomedical engineering problems. Prominent experts in the areas of biomedical signal processing, biomedical data treatment, medicine, signal processing, system biology, and applied physiology introduce novel techniques and algorithms as well as their clinical or physiological applications.Divided into seven sections, Advanced Methods of Biomedical Signal Processing covers:. The peculiarities of biomedical signal processing with respect to more traditional applications of digital signal processing and their classification. An experimental physiologist's and cardiologist's view of the cardiovascular, central and autonomic nervous systems. An important link between biomedical signal processing and physiological modeling. Time-frequency, time-scale, and wavelet analysis. Advanced methods employed in complexity measurements. Computational genomics and proteomics. Key methods for signal classification, such as neural networks, neuro-fuzzy and genetic algorithmsThe book provides a compelling overview of techniques, such as multisource and multi-scale integration of information for physiology and clinical decision; the integration of signal processing methods with a modeling approach; complexity measurement from biomedical signals; higher order analysis in biomedical signals; and classification and parameter enhancement. Various contributions reveal that biomedical signal processing must be viewed in a wider context, with key links to the modeling phase of the signal-generating mechanisms, in order to better comprehend the behavior of the biological system under

investigation.Graduate and PhD students in engineering/biomedical engineering courses, physics and applied mathematics, as well as research professionals in medical and biological sciences will highly benefit from this authoritative resource.