# Data Modeling For Metrology And Testing In Measurement Science

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This book and companion DVD provide a comprehensive set of modeling methods for data and uncertainty analysis, taking readers beyond mainstream methods described in standard texts. The emphasis throughout is on techniques having a broad range of real-world applications in measurement science. Mainstream methods of data modeling and analysis typically rely on certain assumptions that do not hold for many practical applications. Developed in this work are methods and computational tools to address general models that arise in practice, allowing for a more valid treatment of calibration and test data and providing a deeper understanding of complex situations in measurement science. The companion DVD contains tutorials, sample code, and software packages with demonstrations, enabling readers to test and use tools presented in the book without having to write their own code. Additional features and topics of the book include: Introduction to modeling principles in metrology and testing Presentation of a basic probability framework in metrology and statistical approaches to uncertainty assessment Discussion of the latest developments in data analysis using least squares, Fast Fourier Transform, wavelets, and fuzzy logic methods Data fusion using neural networks, fuzzy methods, decision making, and risk analysis A computer-assisted, rigorous approach to data evaluation and analysis of measurement software validity Introduction to virtual instruments, and an overview of IT tools for measurement science Data Modeling for Metrology and Testing in Measurement Science may be used as a textbook in graduate courses on data modeling and computational methods, or as a training manual in the fields of calibration and testing. The book will also serve as an excellent reference for metrologists, mathematicians, statisticians, software engineers, chemists, and other practitioners with a general interest in measurement science. EAN/ISBN : 9780817648046 Publisher(s): Birkhuser Discussed keywords: Messen (Technik), Metrologie Format: ePub/PDF Author(s): Pavese, Franco - Forbes, Alistair B.

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