1. Record Nr. UNINA9910300374503321

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Titolo	Measurement Uncertainties in Science and Technology / / by Michael Grabe
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
ISBN	3-319-04888-0
Edizione	[2nd ed. 2014.]
Descrizione fisica	1 online resource (394 p.)
Disciplina	519 530 530.15 530.8
Soggetti	Physical measurements Measurement Applied mathematics Engineering mathematics Physics Measurement Science and Instrumentation Mathematical and Computational Engineering Mathematical Methods in Physics
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.
Nota di contenuto	Characterization, Combination of Propagation of Errors -- Least Squares Adjustment -- Linear and Linearized Systems -- Generic Metrological Issues.
Sommario/riassunto	This book recasts the classical Gaussian error calculus from scratch, the inducements concerning both random and unknown systematic errors. The idea of this book is to create a formalism being fit to localize the true values of physical quantities considered – true with respect to the set of predefined physical units. Remarkably enough, the prevailingly practiced forms of error calculus do not feature this property which however proves in every respect, to be physically indispensable. The amended formalism, termed Generalized Gaussian

Error Calculus by the author, treats unknown systematic errors as biases and brings random errors to bear via enhanced confidence intervals as laid down by students. The significantly extended second edition thoroughly restructures and systematizes the text as a whole and illustrates the formalism by numerous numerical examples. They demonstrate the basic principles of how to understand uncertainties to localize the true values of measured values - a perspective decisive in view of the contested physical explorations.