

# Preface

The purpose of this book is to provide insight into computational techniques commonly used in surface and roundness metrology. It is intended to serve as a reference for engineers who routinely use a variety of metrology tools and are interested in understanding the underlying mathematical basis of the data processing from raw data to final parameters. This book can also be used as a text for advanced courses in engineering metrology for students already familiar with measurement methods and practices.

Most of the material is presented with the objective of enabling the reader to not only assimilate the mathematics involved, but also to be able to quickly implement the techniques using a standard math package. For that reason, a number of exercises are included that highlight the implementation of the algorithms using simulated data of surface features. The book employs MATLAB extensively for these exercises. Familiarity with MATLAB will aid in understanding the material.

Also, it should be pointed at the outset that this book assumes a general familiarity with engineering metrology methods; for readers unfamiliar with some of the measurement techniques whose computational aspects are discussed, several excellent textbooks are available and referenced in Chap. 1.

Computational Surface and Roundness Metrology

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2009, XX, 263 p. 87 illus., Hardcover

ISBN: 978-1-84800-296-8