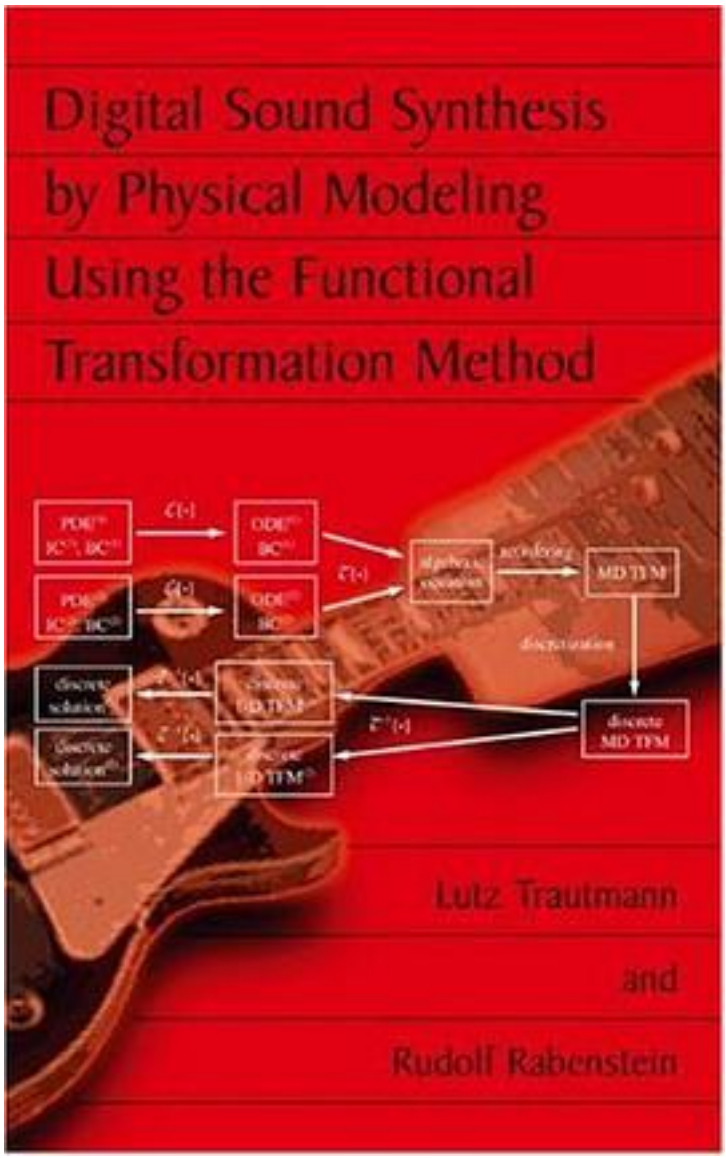
Digital Sound Synthesis by Physical Modeling Using the Functional Transformation Method



Digital Sound Synthesis by Physical Modeling Using the Functional Transformation Method_下载链接1_

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This book derives and discusses the current state of the art in physical modelling of musical instruments for real-time sound synthesis. It includes the derivation of mathematical models in the form of partial differential equations for the vibrational description of strings, membranes/plates, and resonant bodies. Their solution and simulation is first described by classical methods, including finite difference method, digital waveguide method, and modal synthesis method. The focus of this book is on the new functional transformation method, providing an analytical solution to the underlying mathematical model. With its large number of examples, illustrations and comparisons to other modelling techniques, this book is an excellent reference for graduate courses on sound synthesis techniques, as well as a reference for researchers in acoustics, mechanics, operational mathematics, and electrical engineering.

作者介绍:

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