

## Contents

<i>Preface</i>	iii
<i>Contributors</i>	vii
<b>Sturm–Liouville Problems</b>	<b>1</b>
<i>Anton Zettl</i>	
The One-Dimensional Inverse Scattering Problem for Nonhomogeneous Media with Discontinuous Wavespeed	105
<i>Tuncay Aktosun, Martin Klaus, and Cornelis Van Der Mee</i>	
An Inverse Matrix Eigenvalue Problem	135
<i>Ayşe Alaca and Angelo B. Mingarelli</i>	
Perturbation Theory for a One-Term Weighted Differential Operator	149
<i>Terry Anderson, Richard Brown, and Don Hinton</i>	
On the Approximation of Eigenvalues of Singular Sturm–Liouville Problems by Those of Suitably Chosen Regular Problems	171
<i>Paul B. Bailey</i>	
On a Regular Sturm-Liouville Problem on a Finite Interval with the Eigenvalue Parameter Appearing Linearly in the Boundary Conditions	183
<i>Boris P. Belinskiy and Jerry P. Dauer</i>	
The Computation of the Titchmarsh–Weyl $m$ -Function	197
<i>B. Malcolm Brown and William Desmond Evans</i>	
Sturm–Liouville Problems with an Infinite Number of Interior Singularities	211
<i>W. Norrie Everitt, Carol Shubin, Guenter Stolz, and Anton Zettl</i>	
On the Spectral Analysis of the Laguerre Polynomials $\{L_n^{\lambda}(x)\}$ for Positive Integers $k$	251
<i>W. Norrie Everitt, K. H. Kwon, Lance L. Littlejohn, and Richard Wellman</i>	
On Generating Theorems and Conjectures in Spectral Theory with Computer Assistance	285
<i>Charles T. Fulton</i>	

<b>Sturm–Liouville Theory, Asymptotics, and the Schrödinger Equation</b> <i>David B. Pearson</i>	301
<b>Guaranteed Numerical Bounds for Eigenvalues</b> <i>Michael Plum</i>	313
<b>Accurate Sturm–Liouville Eigenfunction Computation in Mathematical Software</b> <i>Steven Pruess</i>	333
<b>SLDRIVER: A Tool for Exploring SL Solvers and SL Problems</b> <i>John D. Pryce</i>	349
<b>Applications of the Walker Method</b> <i>J. K. Shaw, A. P. Baronavski, and H. D. Ladouceur</i>	377
<i>Index</i>	397