

Applied Mathematics and Contemporary Methods for Real-World Problems

Editör

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İÇİNDEKİLER

1. BÖLÜM

Algebraic Solitary Waves and Periodic-Amplitude Travelling Waves in a Q-Deformed Schrödinger Model.....	2
	<i>Mustafa EKİCİ</i>

2. BÖLÜM

Mathematical Modeling of Population Growth: Classical Models and Computational Applications	19
	<i>Özlem KAYTMAZ</i>

3. BÖLÜM

Comparing Data-Driven and Traditional Models for Real-World Systems.....	33
	<i>Seda GÖKTEPE KÖRPEOĞLU</i>

4. BÖLÜM

Roots of Complex and Dual Numbers: A Comparative Approach	47
	<i>Sümeyye GÜR MAZLUM</i> <i>Lale CONA</i>

5. BÖLÜM

Monotone Iterative and Quasilinearization Methodson Time Scales	67
	<i>Şahap ÇETİN</i> <i>Abdullah YİĞİT</i>

PREFACE

Mathematical modelling begins with assumptions that translate a real-world problem into a mathematical framework. Analysing the resulting equations helps us understand how a population grows, how a wave travels, or how the behaviour of a system can be inferred from measured data. Analytical methods reveal the structure of a model, while numerical computations help explore its consequences in practice.

Applied Mathematics and Contemporary Methods for Real-World Problems brings together chapters written in this spirit. Topics range from classical population models to nonlinear wave equations, and from iterative methods on time scales to data-driven modelling. Taken together, these chapters show how established mathematical ideas and contemporary methods can inform the study of diverse problems. A common concern runs through them: clarifying the assumptions underlying a model, assessing the reliability of its results, and recognising its limitations. Throughout the book, analytical results are complemented by numerical computations.

I hope this book will be useful to researchers in applied mathematics, graduate students, and readers from other fields with an interest in mathematical modelling. I sincerely thank the chapter authors for sharing their knowledge and expertise, and everyone who contributed to preparing this book for publication.

Dr. Öğr. Üyesi Muhammed HASDEMİR