

Efficient Modeling And Control Of Large-scale Systems

[DOWNLOAD HERE](#)

1;Foreword;6 2;Preface;8 3;Contents;12 4;List of Contributors;18 5;Part I Model Reduction, Large-Scale System Modeling and Applications;22 5.1;Interpolatory Model Reduction of Large-Scale Dynamical Systems;23 5.1.1;1 Introduction;23 5.1.2;2 Problem Setting;24 5.1.2.1;2.1 The General Interpolation Framework;26 5.1.2.2;2.2 Model Reduction via Projection;28 5.1.2.3;2.3 Interpolatory Projections;30 5.1.2.4;2.4 Error Measures;34 5.1.3;3 Interpolatory Optimal H2 Approximation;38 5.1.3.1;3.1 An Algorithm for Interpolatory Optimal H2 Model Reduction;41 5.1.3.2;3.2 Numerical Results for IRKA;42 5.1.4;4 Interpolatory Passivity Preserving Model Reduction;45 5.1.4.1;4.1 An Example of Passivity Preserving Model Reduction;47 5.1.5;5 Structure-Preserving Model Reduction Using Generalized Coprime Factorizations;50 5.1.5.1;5.1 A Numerical Example: Driven Cavity Flow;53 5.1.5.2;5.2 Second-Order Dynamical Systems;55 5.1.6;6 Model Reduction of Parametric Systems;57 5.1.6.1;6.1 Numerical Example;60 5.1.7;7 Model Reduction from Measurements;61 5.1.7.1;7.1 Motivation: S-Parameters;61 5.1.7.2;7.2 The Loewner Matrix Pair and Construction of Interpolants;62 5.1.7.2.1;7.2.1 The General Case;66 5.1.7.3;7.3 Loewner and Pick Matrices;66 5.1.7.4;7.4 Examples;67 5.1.7.4.1;7.4.1 A Simple Low-order Example;67 5.1.7.4.2;7.4.2 Coupled Mechanical System;69 5.1.7.4.3;7.4.3 Four-pole Band-pass Filter;72 5.1.8;8 Conclusions;73 5.1.9;References;73 5.2;Efficient Model Reduction for the Control of Large-Scale Systems;79 5.2.1;1 Introduction;79 5.2.2;2 Spectral Decomposition;80 5.2.3;3 Simultaneous Gradient Error Reduction;82 5.2.4;4 Balancing;84 5.2.4.1;4.1 Techniques Not Requiring Balancing;86 5.2.4.2;4.2 Balancing Over A Disk;88 5.2.5;5 Example: Large-Scale System Application;89 5.2.6;References;91 5.3;Dynamics of Tensegrity Systems;93 5.3.1;1 Introduction and Motivation;93 5.3.2;2 Dynamics of a Single Rigid Rod;94 5.3.2.1;2.1 Nodes as Functions of the Configuration;96 5.3.2.2;2.2 String Forces;97 5.3.2.3;2.3 Generalized Forces and Torques;98 5.3.2.4;2.4 Equations of Motion;98 5.3.3;3 Class 1 Tensegrity Systems;99 5.3.4;4 Class k Tensegrity Systems;102 5.3.4.1;4.1 A Class 2 Tensegrity Cable Model;102 5.3.5;5 Concluding Remarks;107 5.3.6;References;107 5.4;Modeling a Complex Aero-Engine Using Reduced Order Models;109 5.4.1;1 Introduction;109 5.4.2;2 Gas Turbine System;110 5.4.2.1;2.1 Nonlinear Static Model of Gas Turbine;111 5.4.2.2;2.2 Nonlinear

Dynamic Model of Gas Turbine;112 5.4.3;3 Problem Formulation for Reduced Order Data Driven Modeling;113 5.4.3.1;3.1 Criterion Selection;114 5.4.3.2;3.2 Model Selection: EE vs. OE;116 5.4.3.2.1;3.2.1 Equation Error (EE) Model;117 5.4.3.2.2;3.2.2 Output Error (OE) Model;118 5.4.4;4 NLS for OE Parameter Identification;119 5.4.4.1;4.1 Calculation of μ equation $V(k)$ and the Jacobian;120 5.4.4.2;4.2 Approximation of $R(k)$ and the Hessian;121 5.4.5;5 Application and Results;124 5.4.5.1;5.1 First-Order Model;125 5.4.5.2;5.2 Second-Order Model;129 5.4.6;6 Summary;130 5.4.7;References;130 6;Part II Large-Scale Systems Control and Applications;132 6.1;Robust Control of Large-Scale Systems: Efficient Selection of Inputs and Outputs;133 6.1.1;1 Introduction;133 6.1.2;2 Preliminaries and Problem Formulation;135 6.1.2.1;2.1 Background on Sum-of-Squares;136 6.1.3;3 Robust Controllability Degree;137 6.1.3.1;3.1 Special Case: A Polytopic Region;142 6.1.3.2;3.2 Comparison with Existing Results;146 6.1.4;4 Numerical Example;147 6.1.5;5 Summary;150 6.1.6;References;150 6.2;Decentralized Output-Feedback Control of Large-Scale Interconnected Systems via Dynamic High-Gain Scaling;153 6.2.1;1 Introduction;153 6.2.2;2 Decentralized Control Based on The Adaptive Dual Dynamic High-Gain Scaling Paradigm;155 6.2.2.1;2.1 Assumptions;155 6.2.2.2;2.2 Observer and Controller Designs;158 6.2.2.3;2.3 Stability Analysis;159 6.2.3;3 Generalized Scaling: Application t EAN/ISBN : 9781441957573 Publisher(s): Springer, Berlin, Springer Science & Business Media Discussed keywords: System Format: ePub/PDF Author(s): Mohammadpour, Javad - Grigoriadis, Karolos M.

[DOWNLOAD HERE](#)

Similar manuals:

[The New Office Building Of T Systems In Vienna Austria](#)

[Burner System Of A Hot-air Balloon In Front Of Sky And Yellow Balloon, Montgolfiade Bad Wiessee, Bavaria, Germany](#)

[Automatic Entrance Control System With Chip Card Access](#)

[Automatic Entrance Control System With Chip Card Access](#)

[Track System And Train At Sunset, Munich, Bavaria, Germany](#)

[Approaching Airbus, Ground Flight-control System](#)

[Warning And Railway System](#)

[Intercom System With Video Surveillance](#)

[Vine-yard With Transportation System](#)

[Ingrown Head Of A Buddha Figure Into The Root System Of A Fig Tree Ficus Religiosa Wat Mahathat Ayutthaya Thailand](#)

[Ingrown Head Of A Buddha Figure Into The Root System Of A Fig Tree Ficus Religiosa Wat Mahathat Ayutthaya Thailand](#)

[Buddha Head Entwined By The Root System Of A Fig Tree Ficus Religiosa Wat Mahathat Ayutthaya Thailand](#)

[Ingrown Head Of A Buddha Figure Into The Root System Of A Fig Tree Ficus Religiosa Wat Mahathat Ayutthaya Thailand](#)

[Ingrown Head Of A Buddha Figure With Colourful Cloth Into The Root System Of A Fig Tree Ficus Religiosa Wat Mahathat Ayutthaya Thailand](#)

[Buddha Head Entwined By The Root System Of A Fig Tree Ficus Religiosa Wat Mahathat Ayutthaya Thailand](#)

[Veils Of Mist Of Vanishing Low Pressure System Are Ascending Mountain Slope Tyrol Austria](#)

[Straw And Umbrella In An Orange: Symbol For Building The Immune System Or Vacation](#)

[Arid Red Hills And Prairie Flowers In The Foreground, Greater Yellowstone Ecosystem, Wyoming, USA, North America](#)

[Secret Entrance To An Underground Tunnel System Used By The Vietcong, Cu Chi, Vietnam, Southeast Asia, Asia](#)

[Jenny Lake, Grand Teton Range, Grand Teton National Park, Greater Yellowstone Ecosystem, Wyoming, United States Of America](#)

[Jenny Lake, Grand Teton Range, Grand Teton National Park, Greater Yellowstone Ecosystem, Wyoming, United States Of America](#)

[Jenny Lake, Grand Teton Range, Grand Teton National Park, Greater Yellowstone Ecosystem, Wyoming, United States Of America](#)

[Jenny Lake, Grand Teton Range, Grand Teton National Park, Greater Yellowstone Ecosystem, Wyoming, United States Of America](#)

[Jenny Lake, Grand Teton Range, Grand Teton National Park, Greater Yellowstone Ecosystem, Wyoming, United States Of America](#)

[Symbolic Picture, No More Politikvertrauen Ger. For Trust In Politicians And The Political System](#)

[Car Driving Along A Gravel Road, Greater Yellowstone Ecosystem, Wyoming, USA](#)

[Rotary Irrigation Sprinkler, Over Head Sprinkling System](#)

[Fictitious Planetary System With Stars, Nebulae, Lens Flare Effects And A Planet, Detail, 3D Illustration](#)

[Root System On The Entrance Tower To The Ta Som Temple, Siem Reap, Cambodia, Southeast Asia](#)

[Root System Of A Fig Tree On The Ruins Of The Ta Prohm Temple, Siem Reap, Cambodia, Southeast Asia](#)

[Recycling System, Beach, Barcelona, Catalonia, Spain, Europe](#)

[Recycling System, Beach, Barcelona, Catalonia, Spain, Europe](#)

[Three Dimensional Grid Construction Out Of Blue Metallic Spheres And Rods, 3D Illustration, Concept Symbolizing Networks, Interconnectedness, Construction, Business Systems, Organization, Structur](#)

[Three Dimensional Grid Construction Out Of Blue Metallic Cubes And Rods, 3D Illustration, Concept Symbolizing Networks, Interconnectedness, Construction, Business Systems, Organization, Structure](#)

[Beautiful Young Dark-skinned Woman Using An Apartment Security Entry System To Give A Visitor Access](#)

[Chaotic Power Cable System, Jaisalmer, India, South Asia](#)

[Solar Power System On An Old Hut](#)

[Pre-printed Forms, Tax Declaration, Symbolic Picture For The Complicated Tax System](#)

[Pre-printed Forms, Tax Declaration, Symbolic Picture For The Complicated Tax System](#)

[Astron Gold Zoom Expose System First Day.jpg](#)

[Astron Gold Zoom Expose System Sunshine.jpg](#)

[Astron Gold Zoom Expose System Worship.jpg](#)

[Photovoltaic System, Solar Cells, Detail Texture](#)

[Photovoltaic System, Solar Cells, Detail Texture](#)

[Entrance To The Viet Cong Tunnel System In Chu Chi, Vietnam, Asia](#)

[Date Palm And Banana Plant Near A Falaj Canal, Irrigation System, Of Wadi Shab, Hajar Ash Sharqi Mountains, Sharqiya Region, Sultanate Of Oman, Arabia, Middle East](#)

[Storm Warning System On The Shores Of Lake Constance With A Starry Sky, Konstanz, Baden-Wuerttemberg, Germany, Europe](#)

[Mobile Sprinkler System Irrigating A Green Field, Hakatere, South Island, New Zealand](#)

[Geocacher Checking The Coordinates With A GPS Navigation System On Mt. Leder Tschobenstein In Bernau In The Black Forest, Baden-Wuerttemberg, Germany, Europe](#)

[BTS Skytrain, Bangkok Mass Transit System, S-Bahn Between Skyscrapers, Bangkok, Thailand, Southeast Asia, Asia](#)