1.	Record Nr.	UNINA9910552712003321
	Titolo	Large-Scale Scientific Computing : 13th International Conference, LSSC 2021, Sozopol, Bulgaria, June 7–11, 2021, Revised Selected Papers / / edited by Ivan Lirkov, Svetozar Margenov
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
	ISBN	3-030-97549-5
	Edizione	[1st ed. 2022.]
	Descrizione fisica	1 online resource (557 pages)
	Collana	Lecture Notes in Computer Science, , 1611-3349 ; ; 13127
	Disciplina	502.85 004
	Soggetti	Computer science Computer networks Data structures (Computer science) Information theory Numerical analysis Computer engineering Computer science - Mathematics Theory of Computation Computer Communication Networks Data Structures and Information Theory Numerical Analysis Computer Engineering and Networks Mathematical Applications in Computer Science
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Invited Papers -- Random-walk Based Approximate k-Nearest Neighbors Algorithm for Diffusion State Distance -- Model Reduction for Large Scale Systems -- II Fractional Di_usion Problems: Numerical Methods, Algorithms and Applications -- Constructions of Second Order Approximations of the Caputo Fractional Derivative -- Parameter Identification Approach for a Fractional Dynamics Model of Honeybee Population -- A Newton's Method for Best Uniform Polynomial

Approximation -- Reduced Sum Implementation of the BURA Method for Spectral Fractional Diffusion Problems -- First-order Reaction-diffusion System with Space-fractional Diffusion in an Unbounded medium -- Performance Study of Hierarchical Semi-Separable Compression Solver for Parabolic Problems with Space-fractional Diffusion -- Numerical Solution of Non-Stationary Problems with a Rational Approximation for Fractional Powers of the Operator -- Large-Scale Models: Numerical Methods, Parallel Computations and Applications -- An Exact Schur ComplementMethod for Time-harmonic Optimal Control Problems -- On the Consistency Order of Runge–Kutta Methods Combined with Active Richardson Extrapolation -- Study the Recurrence of the Dominant Pollutants in the Formation of AQI Status Over the City of Sofia for the Period 2013-2020 -- One Solution of Task with Internal Flow in Non-uniform Fluid Using CABARET Method -- Behavior and Scalability of the Regional Climate Model RegCM4 on High Performance Computing Platforms -- Quantum Effects on 1/2 [111] Edge Dislocation Motion in Hydrogen-Charged Fe from Ring-Polymer Molecular Dynamics -- Degeneracy of Tetrahedral Partitions Produced by Randomly Generated Red Refinements -- Effluent Recirculation for Contaminant Removal in Constructed Wetlands under Uncertainty: A Stochastic Numerical Approach Based on Monte Carlo Methodology -- Sensitivity Study of Large-Scale Air Pollution Model Based on Modifications of the Latin Hypercube Sampling Method -- Sensitivity Operator-Based Approach to the Interpretation ofHeterogeneous Air Quality Monitoring Data -- Using the Cauchy Criterion and the Standard Deviation to Evaluate the Sustainability of Climate Simulations -- Multidimensional Sensitivity Analysis of an Air Pollution Model Based on Modifications of the van der Corput Sequence -- Running an Atmospheric Chemistry Scheme from a Large Air Pollution Model by Using Advanced Versions of the Richardson Extrapolation -- Application of Metaheuristics to Large-Scale Problems -- New Clustering Techniques of Node Embeddings Based on Metaheuristic Optimization Algorithms -- A Comparison of Machine Learning Methods for Forecasting Dow Jones Stock Index -- Optimal Knockout Tournaments: Definition and Computation -- Risk Registry Platform for Optimizations in Cases of CBRN and Critical Infrastructure Attacks -- Influence of the ACO Evaporation Parameter for Unstructured Workforce Planning Problem -- binMeta: a New Java Package for Meta-heuristic Searches -- Synergy between Convergence and Divergence — Review of Concepts and Methods -- Advanced Stochastic Approaches Based on Optimization of Lattice Sequences for Large-Scale Finance Problems -- Intuitionistic Fuzzy Approach for Outsourcing Provider Selection in a Refinery -- Quantitative Relationship Between Particulate Matter and Morbidity -- Advanced Discretizations and Solvers for Coupled Systems of Partial Differential Equations -- Decoupling Methods for Systems of Parabolic Equations -- Optimal Control of ODEs, PDEs and Applications -- Random Lifting of Set-valued Maps -- Höolder Regularity in Bang-Bang Type Affine Optimal Control Problems -- Simultaneous Space-time Finite Element Methods for Parabolic Optimal Control Problems -- A New Algorithm for the LQR Problem with Partially Unknown Dynamics -- Tensor and Matrix Factorization for Big-Data Analysis -- Solving Systems of Polynomial Equations — a Tensor Approach -- Nonnegative Tensor-train Low-rank Approximations of the Smoluchowski Coagulation Equation -- Boolean Hierarchical Tucker Networks on Quantum Annealers -- Topic Analysis of Superconductivity Literature by Semantic Non-negative Matrix Factorization -- Machine Learning and Model Order Reduction for Large Scale Predictive Simulations -- Deep Neural

Networks and Adaptive Quadrature for Solving Variational Problems -- A full order, reduced order and machine learning model pipeline for efficient prediction of reactive flows -- A Multiscale Fatigue Model for the Degradation of Fiber-reinforced Materials -- A Classification Algorithm for Anomaly Detection in Terahertz Tomography -- Reduced Basis Methods for Efficient Simulation of a Rigid Robot Hand Interacting with Soft Tissue -- Structured Deep Kernel Networks for Data-Driven Closure Terms of Turbulent Flows -- HPC and Big Data: Algorithms and Applications -- On the Use of Low-discrepancy Sequences in the Training of Neural Networks -- A PGAS-based Implementation for the Parallel Minimum Spanning Tree Algorithm -- Comparison of Di_erent Methods for Multiple Imputation by Chain Equation -- Monte Carlo Method for Estimating Eigenvalues Using Error Balancing -- Multi-Lingual Emotion Classification Using Convolutional Neural Networks -- On Parallel MLMC for Stationary Single Phase Flow Problem -- Numerical Parameter Estimates of Beta-uniform Mixture Models -- Large-Scale Computer Simulation of the Performance of the Generalized Nets Model of the LPF-algorithm -- Contributed Papers -- A New Error Estimate for a Primal-Dual Crank-Nicolson Mixed Finite Element Using Lowest Degree Raviart-Thomas Spaces for Parabolic Equations -- A Finite Volume Scheme for a Wave Equation with Several Time Independent Delays -- Recovering the Time-Dependent Volatility in Jump-Diffusion Models from Nonlocal Price Observations -- On the Solution of Contact Problems with Tresca Friction by the Semismooth* Newton Method -- Fitted Finite Volume Method for Unsaturated Flow Parabolic Problems with Space Degeneration -- Minimization of p-Laplacian via the Finite Element Method in MATLAB -- Quality Optimizationof Seismic-derived Surface Meshes of Geological Bodies.

Sommario/riassunto	This book constitutes revised selected papers from the 13th International Conference on Large-Scale Scientific Computing, LSSC 23021, which was held in Sozopol, Bulgaria, during June 7-11, 2021. The 60 papers included in this book were carefully reviewed and selected from a total of 73 submissions. The volume also includes two invited talks in full paper length. The papers were organized in topical sections as follows: Fractional diffusion problems: numerical methods, algorithms and applications; large-scale models: numerical methods, parallel computations and applications; application of metaheuristics to large-scale problems; advanced discretizations and solvers for coupled systems of partial differential equations; optimal control of ODEs, PDEs and applications; tensor and matrix factorization for big-data analysis; machine learning and model order reduction for large scale predictive simulations; HPC and big data: algorithms and applications; and contributed papers.