1. Record Nr. UNINA9910366611403321

Titolo	IUTAM Symposium on Model Order Reduction of Coupled Systems, Stuttgart, Germany, May 22–25, 2018 : MORCOS 2018 / / edited by Jörg Fehr, Bernard Haasdonk
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-21013-8
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (229 pages)
Collana	IUTAM Bookseries, , 1875-3507 ; ; 36
Disciplina	511.8 620.0011
Soggetti	Vibration Dynamics Automatic control Robotics Mechatronics Differential equations, Partial System theory Vibration, Dynamical Systems, Control Control, Robotics, Mechatronics Partial Differential Equations Complex Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface -- Static condensation optimal port/interface reduction and error estimation for structural health monitoring, by Kathrin Smetana -- Parametric Models for Coupled System, by Hermann G. Matthies and Roger Ohayon -- Model order reduction of linear switched systems with constrained switching, by Ion Victor Gosea, Igor Pontes Duff, Peter Benner and Athanasios C. Antoulas -- Reduced order model using data-driven and equation-free methods, by Soledad Le Clainche and Jos´e M. Vega -- An adaptive way of choosing signicant snapshots for the Proper Orthogonal Decomposition, by Steffen Kastian, Stefanie

Reese -- Fully online ROMs and collocation based on LUPOD, by Maria-Luisa Rapún, Filippo Terragni, José M. Vega -- A posteriori Error Estimation in Model Order Reduction of Elastic Multibody Systems with Large Rigid Motion, by Ashish Bhatt, J¨org Fehr, Dennis Grunert and Bernard Haasdonk -- A Reduced Order Approach for the Embedded Shifted Boundary FEM and a Heat Exchange System on Parametrized Geometries, by Efthymios N. Karatzas, Giovanni Stabile, Nabil Atallah, Guglielmo Scovvazzi and Gianluigi Rozza -- POD-Based Augmented Lagrangian Method for State Constrained Heat-Convection Phenomena, by Jonas Siegfried Jehle, Luca Mechelli and Stefan Volkwein -- Coupling of incompressible free-surface flow, acoustic fluid and flexible structure via a modal basis, by Florian Toth and Manfred Kaltenbacher -- Model Order Reduction of Coupled, Parameterized Elastic Bodies for Shape Optimization, by Benjamin Fröhlich, Florian Geiger, Jan Gade, Manfred Bischoff and Peter Eberhard -- A Novel Penalty Based Reduced Order Modelling Approach for Dynamic Analysis of Joint Structures with Localized Non-linearities, by Jie Yuan, Loic Salles, Luca Pesaresi, Chian Wong and Sophoclis Patsias -- POD-DEIM Model Order Reduction for the Monodomain Reaction-Diffusion Sub-Model of the Neuro-Muscular System, by Nehzat Emamy, Pascal Litty, Thomas Klotz, Miriam Mehl and Oliver Röhrle -- Index-aware MOR for Gas Transport Networks, by Nicodemus Banagaaya, Sara Grundel and Peter Benner -- Polynomial Tensor-Based Stability Identification of Milling Process: Application to Reduced Thin-Walled Workpiece, by Chigbogu G. Ozoegwu.

Sommario/riassunto

This volume contains the proceedings of the IUTAM Symposium on Model Order Reduction of Coupled System, held in Stuttgart, Germany, May 22–25, 2018. For the understanding and development of complex technical systems, such as the human body or mechatronic systems, an integrated, multiphysics and multidisciplinary view is essential. Many problems can be solved within one physical domain. For the simulation and optimization of the combined system, the different domains are connected with each other. Very often, the combination is only possible by using reduced order models such that the large-scale dynamical system is approximated with a system of much smaller dimension where the most dominant features of the large-scale system are retained as much as possible. The field of model order reduction (MOR) is interdisciplinary. Researchers from Engineering, Mathematics and Computer Science identify, explore and compare the potentials, challenges and limitations of recent and new advances.