



Dans cette base **vous avez accès à tous les ouvrages**, depuis les origines jusqu'à fin 2022, soit 214 titres répartis dans différentes collections prestigieuses. Les titres couvrent l'intégralité des domaines des mathématiques.

Lorsque vous arrivez sur la base de données vous avez accès cette interface :

The screenshot shows the EMS Press website interface. At the top left is the EMS Press logo. To the right are navigation links: Contact, Submissions, About, Updates, Journals, Books, Subscribe To Open, and Info. Below the navigation is a 'FEATURED Books' section. It displays four book covers in a row. The first cover is highlighted with a yellow border. Below the covers, the details for the first book are shown: 'ZURICH LECTURES IN ADVANCED MATHEMATICS', 'Quantum Ergodicity and Delocalization of Schrödinger Eigenfunctions' by Nalini Anantharaman, Université de Strasbourg and CNRS, France. There is a 'Show book details' link and a 'Download PDF' button. To the right of the featured book details is a larger view of the book cover with a 'Buy from 39,00 €' button and a 'Download PDF' button.

Glissez votre curseur vers le bas pour avoir accès aux collections :

The screenshot shows a grid of book series under the heading 'Book Series'. The grid contains nine items, each with a book cover and text. The second item in the first row, 'ESIAM EMS Series in Industrial and Applied Mathematics', is circled in red with a red arrow pointing to it from above. The items are: 1. EMM EMS Monographs in Mathematics; 2. ESIAM EMS Series in Industrial and Applied Mathematics; 3. ECR EMS Series of Congress Reports; 4. ELM EMS Series of Lectures in Mathematics; 5. ETB EMS Textbooks in Mathematics; 6. ETM EMS Tracts in Mathematics; 7. ESI ESI Lectures in Mathematics and Physics; 8. HEM Heritage of European Mathematics; 9. IRMA IRMA Lectures in Mathematics and Theoretical Physics.

Exemple :



BOOKS » ESIAM

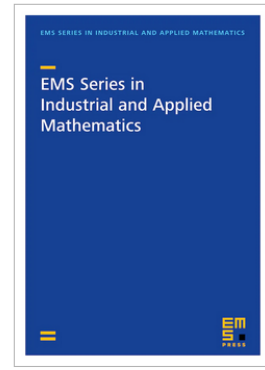
## EMS Series in Industrial and Applied Mathematics

The *EMS Series in Industrial and Applied Mathematics* publishes high quality advanced texts and monographs in all areas of industrial and applied mathematics. Books include those of a general nature as well as those dealing with the mathematics of specific applications areas and real-world situations. While it is intended to disseminate scholarship of the highest standard, authors are encouraged to make their work as accessible as possible.

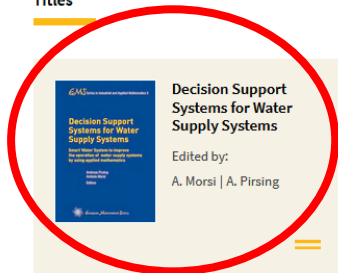
Edited by Alfredo Bermúdez de Castro (Universidade de Santiago de Compostela), Lorenz T. Biegler (Carnegie Mellon University), Annalisa Buffa (École Polytechnique Fédérale de Lausanne), Maria J. Esteban (CNRS, Université Paris-Dauphine), Matthias Heinkenschloss (Rice University), Alexander Martin (Universität Erlangen-Nürnberg), Volker Mehrmann (Technische Universität Berlin), Stephen B. G. O'Brien (University of Limerick)

### Identifiers

DOI Prefix [10.4171/ESIAM](#)  
ISSN print 2523-5087  
ISSN digital 2523-5095



### Titles



Cliquez sur Download PDF en ne tenant pas compte du tarif indiqué

BOOKS » ESIAM » COLLECTED VOLUME

## Decision Support Systems for Water Supply Systems

Smart Water System to Improve the Operation of Water Supply Systems by Using Applied Mathematics

### Editors

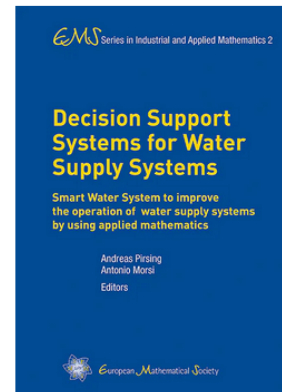
**Antonio Morsi**  
Universität Erlangen-Nürnberg, Germany

**Andreas Pirsing**  
Siemens AG, Berlin, Germany

Overview Contents

Operating water supply systems is complex. Engineers must ensure that consumers are reliably supplied with a sufficient quantity and quality of water, as well as a sufficient water pressure at all times – all while maintaining reasonable prices. This book summarizes the results of the German BMBF (Federal Ministry of Education and Research) funded joint research project, EWave (Project ID: 02WER1323F), that was initiated to develop an innovative Decision Support System (DSS) for water supply companies. For decision making and operational support, the EWave system uses newly developed integrated optimization modules. As a result, the user receives operating schedules on a 15 minute scale. To achieve this, mixed-integer linear and nonlinear mathematical optimization methods are combined. First, a mixed-integer optimization model is solved in order to derive all discrete decisions (primarily pump schedules). The aim is to approximate the physics by piecewise linear relaxations sufficiently to optimize decisions. EWave then uses nonlinear optimization and simulation methods to verify the physics. The process is iterated as necessary. This approach enables globally optimal solutions within an a priori given quality tolerance.

Optimization results obtained in real time yield a potential of energy savings of up to 4–6% daily for the waterworks in the pilot area.



Buy from 69,00 €

Download PDF

Publication Date  
5 June 2020

### Identifiers

DOI [10.4171/207](#)  
ISBN print 978-3-03719-207-8  
ISBN digital 978-3-03719-707-3

### Print

Hardcover, 243 pages, 17cm x 24cm