Mathematical Problems in Engineering

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Special Issue on

# Mathematical Theories in the Era of Big Data

# CALL FOR PAPERS

Data integration is the process in which heterogeneous data is retrieved and combined, providing users with a unified view of them. To effectively address this challenge, data integration has become, over the last decades, the focus of extensive theoretical work on the fundamental topics of schema alignment and data fusion, although many open problems are still unsolved. The recent years have seen an impressive growth in the volume, speed, and heterogeneity of the generated data as well as in the variety and quality of the data. We are in the era of big data! Data is generated, collected, and processed at an unprecedented scale and data-driven decisions influence many aspects of modern society. Data integration is required in many social and life related areas such as emergency management, life quality, and health related data management.

As a consequence, there is a growing interest in applying mathematical theories and methods to model, integrate, and manage massive and fast changing data and in retrieving the valid and valuable knowledge they imply.

The objective of this special issue is to disseminate advanced research on data integration and promote the interaction between data management and knowledge representation communities. We invite the authors to contribute original research articles that describe novel theoretical and practical results on the exploration of mathematical theories and methodologies for big data modeling, integration, and management, as well as review articles describing the current state of the art.

Potential topics include but are not limited to the following:

- Big data science and foundations
- Machine learning and information extraction
- Techniques for the integration of distributed and/or streaming data
- Probabilistic and uncertain data
- Architectures for information integration
- Querying and searching the deep web
- Mathematical methods for big data storage, transferring, and processing
- Mathematical methods for data mining, pattern recognition, artificial intelligence, and knowledge discovery

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/mpe/dic/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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**Submission Deadline**
Friday, 16 March 2018

**Publication Date**
August 2018