

Special Issue

Advances in High-Performance Computing, Optimization and Simulation

Message from the Guest Editors

High-performance computing, optimization and simulation have led to advances in several areas of science, engineering and technology. Recent developments permit the successful completion of computationally intensive problems such as those in chemistry, physics, aerospace, energy, material, healthcare, automobile development, etc. However, further research is required for developing new algorithms, methods and models for new hardware and software architecture, since many heterogeneous many-core processors with accelerators or coprocessors are now an integral part of modern computing systems, especially supercomputers. To fulfill the increasing computing demands, strategies based on heterogeneous computing, mixed precision computing, communication-avoiding computing, etc., have been adopted. The suggested topics include the following:

- High-performance computing;
- Numerical analysis;
- Accurate computing;
- Mixed-precision algorithm;
- Large-scale heterogeneous computing;
- Performance tuning;
- Optimization;
- Parallelization;
- Modeling and simulation.

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About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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