Performance–Power Tradeoffs in Parallel Applications

Guest Editors:

Dr. Daniele De Sensi
Computer Science Department, ETH Zurich, 8092 Zurich, Switzerland

Dr. Tiziano De Matteis
Computer Science Department, ETH Zurich, 8092 Zurich, Switzerland

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Message from the Guest Editors

Dear Colleagues,

Power consumption management is becoming a critical factor in the design of applications and computing systems. In current supercomputers and data centers, the energy cost is quickly going to overcome the cost of the physical system itself, and the end of Dennard Scaling and Moore's Law is further exacerbating the problem.

More important, besides economic considerations, power consumption has a considerable impact on the environment since the CO_2 emissions of data centers are on par with those of entire countries or worldwide airline industries.

Topics of interest include (but are not limited to) the following:

- Software-driven management of power consumption;
- High-level programming APIs for specifying energy/performance requirements;
- Large-scale power management techniques and tools;
- Architectures and Technology for high-performance energy-efficient computing.

Dr. Daniele De Sensi
Dr. Tiziano De Matteis
Guest Editors

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Special Issue

Editor-in-Chief

Prof. Dr. Enrico Sciubba
Department of Mechanical and
Aerospace Engineering,
University of Roma Sapienza, Via
Eudossiana 18, 00184 Roma, Italy

Message from the Editor-in-Chief

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