

SCALING PERFORMANCE IN POWER-LIMITED HPC SYSTEMS

Luca Benini

*University of Bologna, Italy
Institut für Integrierte Systeme, ETH Zurich, Switzerland*

E-mail: luca.benini@unibo.it, lbenini@iis.ee.ethz.ch

Current and future HPC systems are increasingly power-limited. The total power envelope as well as the thermally sustainable power consumption are becoming hard bounds for current and future high-performance architectures and systems.

In this talk I first give some highlights our experience and the insights gained in developing scalable tools and methods for monitoring and managing power and maximizing energy efficiency in modern HPC machines.

Then, I will look into how power and energy management will evolve in next-generation Hardware architecture, moving toward Exascale.