Multiscale Simulation and Petascale Computing

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Abstract

Motivated by China's fast advancement on the petaflops capable of horsepower, one can expect in the coming decades a boom of petascale simulation and software. This talk is around two successful examples of multiscale simulation applications. The one is, in the material science regime, the microstructure-toughness direct linkage simulation on BlueGene/L and the other is, for natural disaster migration, the seismic simulation of the whole nuclear power plant under earthquake on Earth Simulator. In the last, the current progresses on Dawning 6000, the on-going petaflops supercomputer project, will be briefed.