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Designing Flash-X, a Multiphysics Application for Exascale and Beyond

Wednesday 22 March 2023 16:40 (20 minutes)

Computing at large scales has become extremely challenging due to increasing heterogeneity in both hardware and software. A positive feedback loop of more scientific insight leading to more complex solvers which in turn need more computational resources has been a continuous driver for development of more powerful platforms. The field of computer architecture is poised for more radical changes in how future platforms are likely to be designed, especially because scientific workflows themselves are growing more complex and diverse. We have enhanced Flash-X, a multiphysics community software, to be able to cope with heterogeneity in and diversity across platform architectures. In this presentation we will distill our experience for achieving performance portability, including its design features, with an emphasis on tools that were developed in collaboration with Riken.

JLESC topic

Numerical Methods and Algorithms

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Session Classification: Project Talks on further topics

Track Classification: Applications and mini apps