

An Application Perspective on Programming Models for the Future

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Abstract

Application developers are confronted with three axes of increasing complexity going forward. The first is the increasing heterogeneity in computing platforms at all levels. The second is the increasing heterogeneity in solvers and data management engendered by increasing model fidelity. And the third is moving existing code base to future programming models. While the first two will determine which future programming models may deliver the needed performance, the third will determine their adoption. I will present the perspective of applications from both sides, desirable abstractions that can help performance and portability, and tools and features that will be essential for the adoption of programming models incorporating these abstractions.

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