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Title: HPC for Meteorology in the Exascale Era

Abstract:

To enable increasing performance in spite of the end of Dennard scaling and the slowing of Moore's law gains, system architects and processor companies are turning to specialization. Not only do application developers need to target discrete GPUs from multiple vendors, the use of chiplets is enabling heterogeneous APUs with both CPU and GPU capabilities, as well as next generation high bandwidth on-chip memory. To access higher levels of performance while managing the costs of electrical power, applications will need to be able to exploit these technologies.

At the same time, weather and climate centers are transitioning to hybrid cloud environments and their storage and data management methods are evolving to accommodate the needs of machine learning and advanced analytics.

This talk will explore these changes and the implications for community models.