



NCAR

**National Center for Atmospheric Research**  
**CISL SEMINAR SERIES**

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Energy-Aware Performance Scaling in the Petascale Regime

Abstract:

Many large scale modeling and simulation applications are based on sparse numeric and symbolic computations. As we approach petascale computing regimes, power, energy and cooling costs continue to skyrocket with a widening gap between actual execution rates on realistic sparse scientific workloads and the peak on tuned dense kernels. We discuss how interactions between code and computer architecture features can be exploited to enable energy-aware, high performance for sparse scientific computations. In the near term, it can lead to adaptive techniques for reducing dynamic power without impacting performance. In the longer term, it could provide insights for the design of energy-aware high performance hardware architectures.



***Date, Time, and Location:***

**Friday, March 23, 2007**  
**10:00 AM – 11:00 AM**  
**ML Main Seminar Room**