

Dinesh Kaushik



Title of Presentation: Exploiting Concurrency at the Petascale in Neutron Transport

Dr. Kaushik is a computational scientist at Argonne National Laboratory. His research interests are in scalable algorithm development, performance modeling and prediction, and hybrid parallel programming models in the context of large scale multidisciplinary computational problems arising in neutron transport and fluid dynamics. He has been actively participating in the development of Argonne's software framework SHARP for doing multiphysics high fidelity simulation of nuclear reactor cores on leadership-class petascale platforms. His approach to performance analysis of scientific computing codes has both experimental and theoretical modeling aspects, using full-scale application codes and test kernels across multiple platforms, and includes both parallel scalability and per-processor performance. His work on PETSc-FUN3D code was honored at Supercomputing 1999 with a Gordon Bell Prize (in the "Special" Category). The particular application areas of interest include radiation transport, computational fluid dynamics, aeroacoustics, and quantum chemistry. He has been a reviewer for many scientific computing Journals and conference proceedings.