Current Situation of the COSMO-Model

OR: Why has the COSMO-Model problems with new architectures?

➔ It only uses a pure MPI parallelization. Within one MPI task it is written for a flat memory access.

  ➔ NEC SX-9: 13 % of peak

  ➔ IBM pwr6: about 5-6 % of peak

  ➔ Cray XT4: about 3-4 % of peak (?)

➔ One part is becoming more and more serious: I/O

  ➔ many global communications involved

  ➔ disk access is purely sequential

➔ Although the communications besides I/O are almost all local, the speedup degrades when using many processors.