

# General News (1)

- SciDAC Meetings and presentations
  - February 10: SIAM Mini-symposium: 3D Extended MHD Calculations of Magnetically Confined Plasmas
  - March 10<sup>th</sup>...SciDAC PI's meeting
  - Following week....review of SciDAC ISIC centers
- Journals
  - SciDAC special issue: International Journal of High Performance Computing Applications
  - New SIAM Journal: Multiscale Modeling and Simulation
  - Another new Journal: Journal for Multiscale Computational Engineering

# General News (2)

- Computers
  - NERSC Expansions
    - Seaborg (Power 3) will expand by a factor of 2 to 10 Teraflops by April 2003 (3,328 x 2 processors) \$30M
  - ORNL Cheetah
    - All SciDAC projects should have received an additional allotment on the ORNL Power 4. This is the difference between what was asked for, and what was allocated at NERSC
  - CRAY/NEC SX-6
    - Porting and timing accounts available at ARSC....Initial results for M3D show need for vector elliptic solver
  - Cray X1
    - Jardin and Ethier attended ORNL X1 tutorial (last week)
    - 32 CPU in 2003, 256 CPU in June 2003, 3200 by 2004 (40 TF)
    - New building with 40,000 sq ft computer space almost done
    - New architecture that builds on C90 and T3E, vectors + streams, smart cache, fast memory access
    - Need for a fast vector+stream sparse matrix solver
    - Up to 8-20 times faster than Seaborg (per processor)
  - PPPL Prototype topical computer center
    - 64 dual AMD , 64 GB Memory, 15 TB Disk Space, 100 Mb/s Network
    - Available for use by all SciDAC projects

# General News (3)

- SciDAC Partners

- TOPS

- Keyes (ODU/Columbia) interfacing HyPre with PetSC to give multigrid solver. Required recasting matrices in symmetric form..now complete
    - Discussing elliptic solver optimized for X1 with PetSC group

- TSTT

- RPI SCOREC team (Flaherty, Shepard) have implemented model MHD problem in Trellis
    - Discussions underway to implement high-order elements in M3D

- APDEC

- 2D reconnection problem near completion
    - 3D, Hall-reconnection, toroidal geometry, pellet injection

# General News (4)

- ITPA Meetings
  - Jardin and Strait attended meeting week of Oct 21
  - areas of interest where CEMM could contribute:
    - Definitive simulation of sawtooth in ITER/FIRE including alpha particles
    - VDEs and non-axisymmetric halo currents
    - Magnetic feedback of RWM
    - Killer Pellet and High Pressure Gas Injection Modeling
    - Neoclassical tearing modes, and the interaction of multiple modes (FIR)
- ISOFS status
  - Integrated Simulation and Optimization of Fusion Systems subcommittee submitted report to full FESAC for comment
  - Recommend 15 year project starting at \$20 M/year for first 5 years, split between OFES and OSCAR
  - Focused Integration Initiatives likely structure
    - Address specific integration issues...like kinetic effects on MHD modes.
  - Recommend continued planning activity for FY2003, start in 2004