OVERALL ISSUES

CODE SPEED

- Algorithms
  - stable, efficient, easy-to-program time-stepping algorithms?
  - really really really fast FFTs (else give up on spectral)
  - other silly but expensive bits e.g. transposes
- Code structure
  - vectorisation for Cray C-90; multi-tasking
  - parallelisation for KSR, CM5, IBM SP2, Cray T3D, Cray T3E ...

I/O STRATEGIES

- Would like to dump even 3D data frequently
- Staging strategies
  - avoid i/o bound code
  - requires knowledge of data vaults etc.
- Long term storage strategies
  - data compression
  - fast access and visualisation

COST

- Current parallel version runs at $\sim$ **100 Mflops per processor**
  - Peak performance: 167 GFlops on Cray T3E-1200 at 1024x1024x3069
- 256^3 run of 150,000 steps costs 15,000 pe hours (T3E)
- 1 cpu hour = $1000 (industry)
- Maybe we should be a tad careful!