MIMD vs. SIMD

- **MIMD = Multiple Instruction, Multiple Data**
  - “traditional” parallel processing
  - N processors all doing their own thing

- **SIMD = Singe Instruction, Multiple Data**
  - All processors do exactly the same thing
  - Simple hardware
SIMD Issues

• Programming model???
• Instruction Distribution
• Communication
  – Network Topology
  – Deterministic vs. Dynamic
SIMD Papers

• Abacus
  – 1024 1-bit processors per die
  – 2D mesh

• CAM-8
  – lookup table computation
  – 3D mesh

• CM-2
  – 16 1-bit processors per die
  – Hypercube with local 16-way crossbars