

CMAQ Benchmarks and Parallelization Efficiency by CPU Type

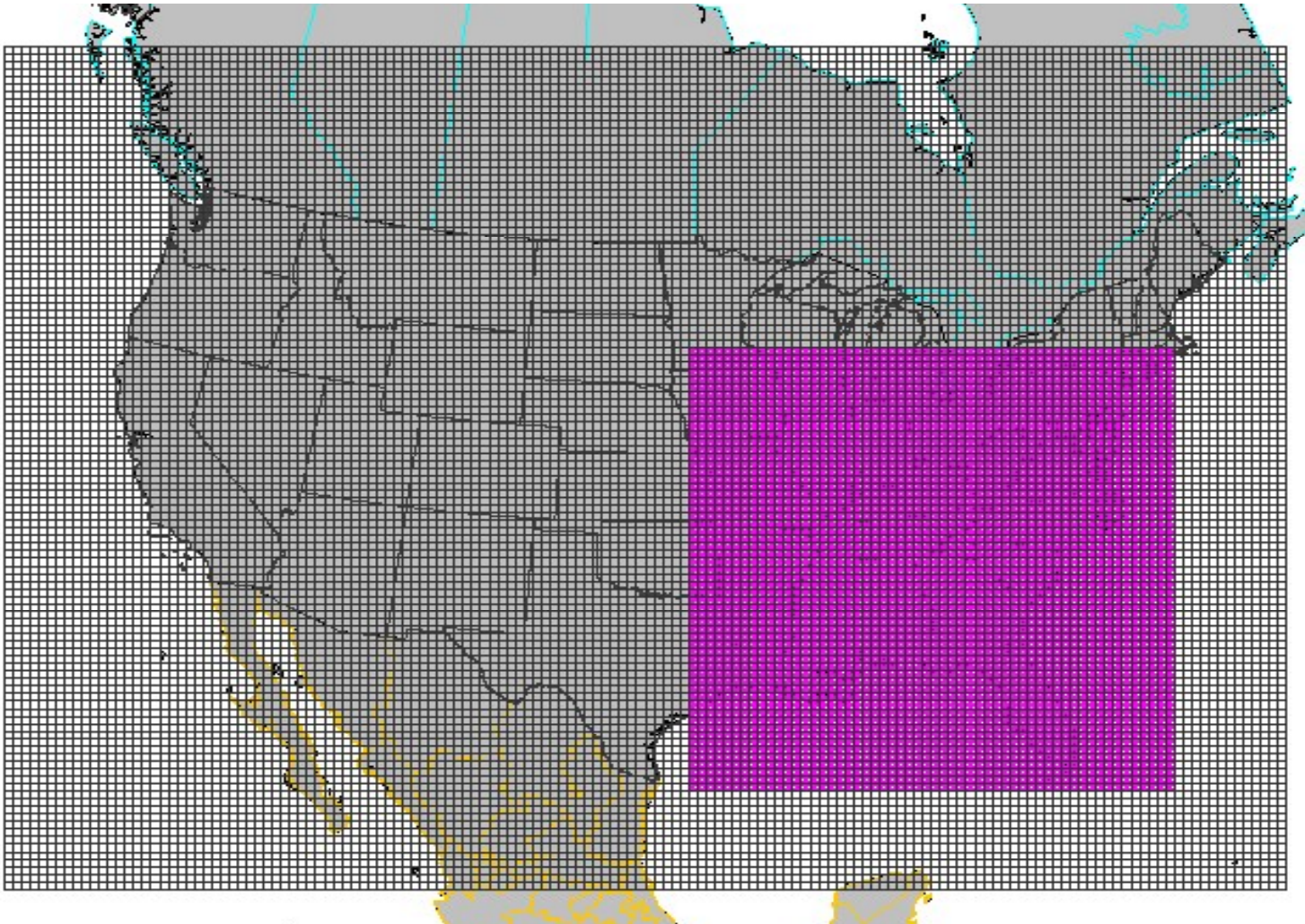
Gail Tonnesen, Zion Wang
University of California, Riverside

October 29, 2003, CMAS Annual Meeting, RTP, NC

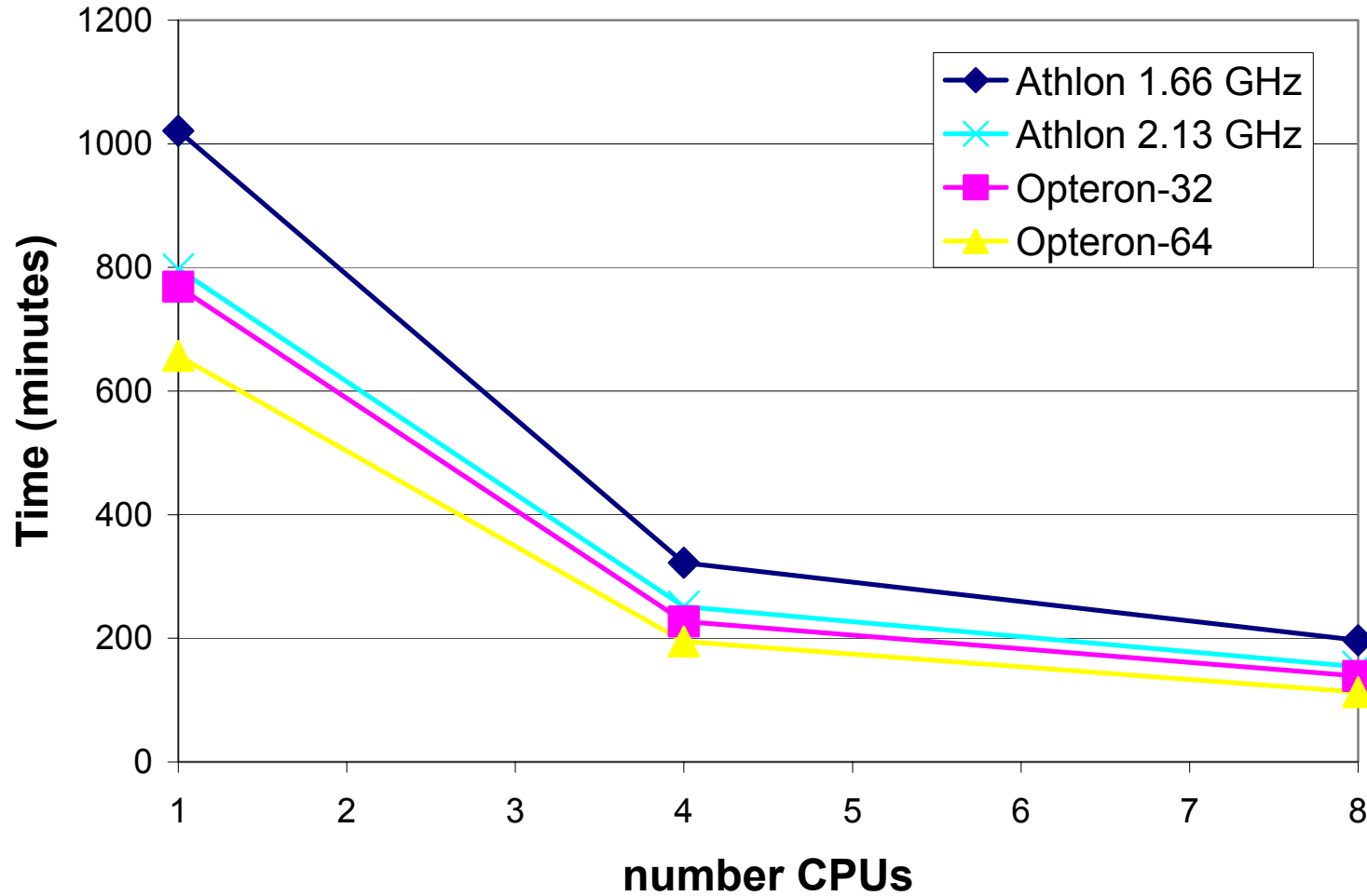
Test Case for benchmarks

- VISTAS 12 km domain
 - 168 x 177 x 19 layers
- Benchmarks for CMAQ version 4.3
- One day simulation, CB4, MEBI
- Single CPU run time hour:minutes
 - Athlon 2 GHz: 14:10
 - Opteron 32bit 2 GHz: 12:49
 - Opteron 64 bit 2 GHz: 10:57

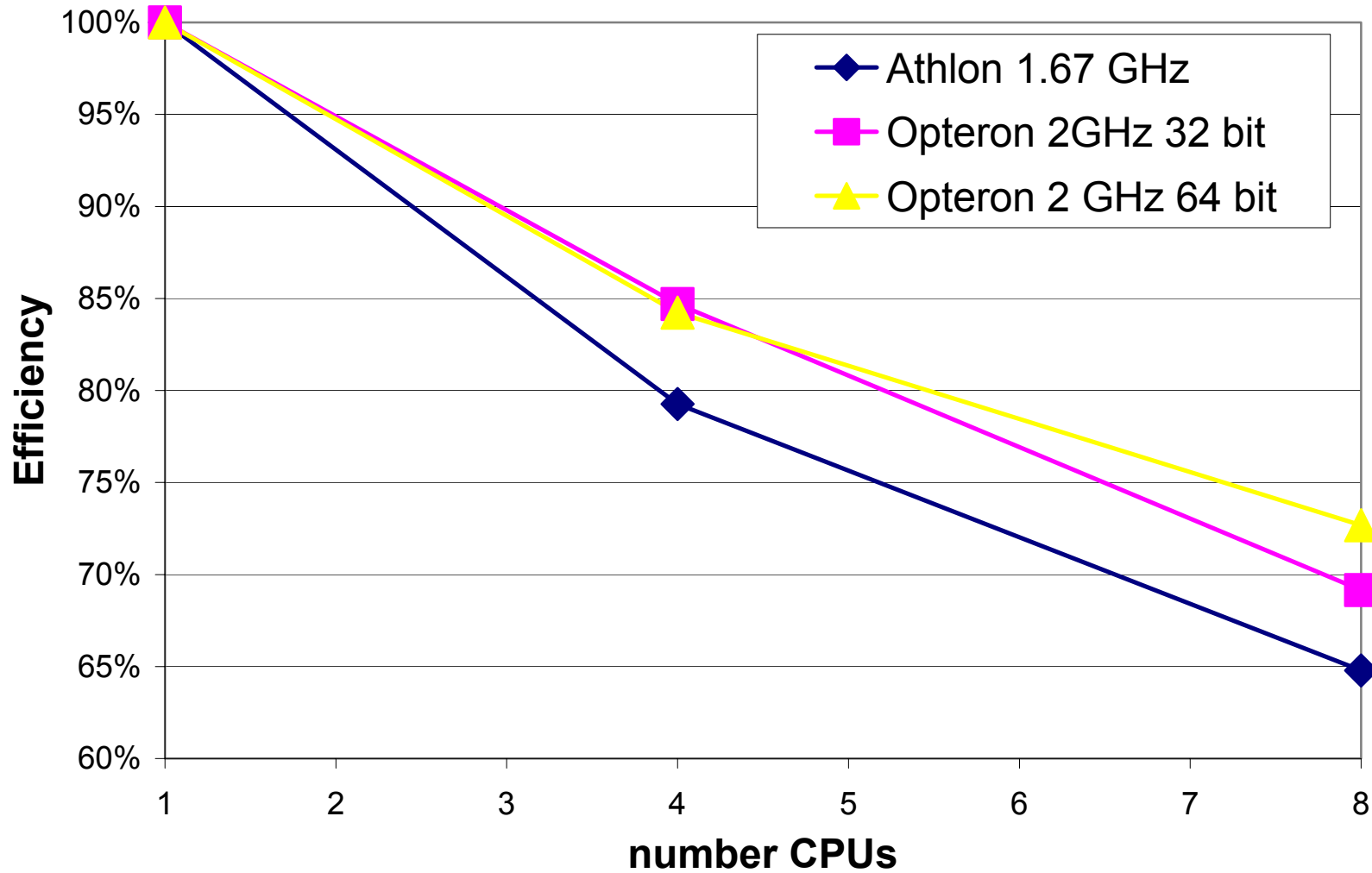
VISTAS 36 km and 12 km domains



Clock Time by CPU Type



CMAQ Parallel Efficiency by CPU Type



Optimal Cost Configuration

- Small cluster < 8 CPUs use Athlon
- Large cluster > 16 CPUs use Opterons?