

## Serie 8

**Exercise 1** *This exercise is made for comparing the parallelization of Blas2 and Blas3. Complete the program in the file `gem.c` for calling `dgemv` and `dgemm`. Test the code with small values of `NMAX`, `ITMAX1` and `ITMAX2`. Then, on the machine `altix` (8 Intel Itanium2 processors), observe the parallelization effects on  $p$  cores,  $1 \leq p \leq 16$ , with `NMAX` = 2048, `ITMAX1` = 2000, `ITMAX2` = 10. See the `Makefile` for making the executable on the lab machines and on `altix`. Write a script for running the 16 cases. The number  $p$  of processors is set by the environment variable: `setenv OMP_NUM_THREADS p`. Caution, by default the number of processors is equal to 16. The output file can be plotted with `gnuplot`.*

**Exercise 2** *We test here the parallelization of Lapack for solving a linear system with dense matrix. Complete the program in the file `lap.c`. Proceed like in the preceding exercise and on `altix` choose `NMAX` = 6000.*