High Performance Computing Laboratory

Type of Infrastructure

Cluster Linux multinode – multiprocessor

Main technical features

- 45 Nodes - Intel Xeon, 1500 core
- GPU Nvidia Pascal Tesla - 128 core
- 2,4 TBytes aggregate Memory
- 70 TFlops aggr. peak performance
- 240 TBytes disk space
- Operating System RedHat 7
- Developer Compilers: Intel Parallel Compiler, IntelMPI, gnu
- Main HPC tool SW:
  - ANSYS - finite element solver for multiphysics simulations
  - Fluent - CFD and transport phenomena simulator
  - Dassault Systèmes Abaqus – finite element solver for multiphysycs simulations
  - MSC NASTRAN finite element solver for structural simulations
  - MSC Actran FEM/BEM/SEA tool for acoustic, vibro-acoustic and aeroacoustic analyses
  - LSTC LS-DYNA – finite element solver for highly nonlinear transient multiphysics problems
  - OpenFoam – open source toolbox for CFD problems
  - SU2 – open source suite for PDE solution

Application Domains

All computational disciplines for which complex calculations at high speeds are requested, for instance:

- Multidisciplinary design optimization (MDO)
- Computational Fluid Dynamics (CFD)
- Computational Aeroacoustics
- Thermal structural analysis
- Artificial Intelligence (AI)
- Propulsion and Combustion
- Atmospheric sciences

Main measuring instruments/techniques

Not applicable

Operational Status

The High Performance Computing Laboratory is fully operational