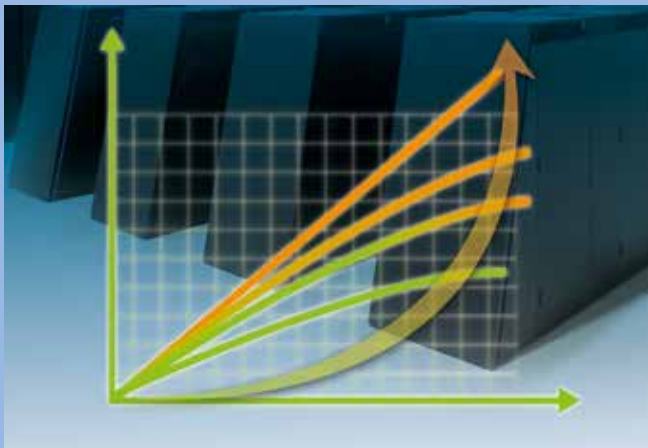


ALGORITHMS, TOOLS AND METHODS LABS

APPLICATION OPTIMIZATION AND USER SERVICE TOOLS



Mission and Objectives

- Optimization and enabling of applications: performance, efficiency, and parallel I/O
- Provide users with knowledge and proper tool sets
- Interaction of Algorithms, Tools and Methods Labs and Simulation and Data Life Cycle Lab

Know-How

- Parallelisation MPI, OpenMP
- Optimization Strategies Compiler, Memory, I/O
- Benchmarking Monitoring, evaluation and parameter-studies of software packages, new architectures
- Collaborations with User Projects

Collaborations with funded Projects and Industry

- PRACE – Scaling Applications for Tier-0 and Tier-1
- DEEP-Projects – Dynamical Exascale Entry Platform
- Sea-Projects: Software for Exascale Architectures
- EOCOE – Energy oriented Centre of Excellence
- CoEC: Center of Excellence in Combustion
- SiVeGCS – Coordination and securing the further availability of GCS' supercomputing resources
- Metis, UNSEEN – HPC in Energy Systems Modelling

Training:

- Courses on MPI, OpenMP, and Parallel I/O
- Collaboration in Extreme Scaling Workshops

Research and Development

- I/O Research: SIONlib – I/O Library for efficient parallel I/O of task-local data from massively parallel application
- Tool Development LLview – Batch system, job monitoring and reporting
- JUBE – Benchmarking environment
- Benchmark Development
e.g. Scalable MPI point-to-point – *Linktest*

