








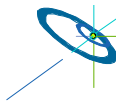


3-Day-Course — Oldenburg — 1st day

Message Passing Interface (part 1)

- 9:00 Introduction [1] (talk) 
- 9:10 Parallel Architectures and Programming Models [2] (talk) 
- 10:00 Coffee
- 10:15 MPI – Introduction to the Message Passing Interface [3+3a] (talk) 
- 10:20 Chap. 1 MPI Overview (talk) 
- 10:50 Chap. 2 MPI Process model (talk+practical) 
- 12:20 Lunch
- 13:20 Chap. 3 Messages and Point-to-Point Communication (talk+practical) 
- 14:45 Coffee
- 15:00 Chap. 4 Non-Blocking Communication (talk+practical) 
- 16:15 Coffee
- 16:30 Chap. 5 Probe, Cancel, Persistent Requests (short-talk) 
- 16:45 Chap. 6 Derived Datatypes (talk+practical) 
- 18:00 End









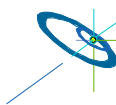
Introduction Rolf Rabenseifner
[1] Slide 9 (3days) Höchstleistungsrechenzentrum Stuttgart

H L R I S 

3-Day-Course — Oldenburg — 2nd day

Message Passing Interface (part 2) and OpenMP

- 9:00 Chap. 7 Virtual Topologies [3, continued] (talk+practical)  
- 10:10 Coffee
- 10:25 Chap. 8 Groups & Communicators, Environment Management (short-talk) 
- 10:40 Chap. 9 Collective Communication (talk+practical) 
- 11:30 Chap. 10 Process Creation and Management [3, 10] (short-talk) 
- 11:40 Lunch
- 12:40 OpenMP – Overview and execution model [7+7a] (talk+practical 15min) 
- 13:40 Coffee
- 13:55 OpenMP – Work sharing directives (talk+practical 25 min) 
- 15:10 OpenMP – Data environment (talk+practical 10min) 
- 15:45 Coffee
- 16:00 OpenMP – Summary and Pitfalls (talk) 
- 16:55 OpenMP – Heat example (talk+homework) 
- 17:20 Short break
- 17:30 Verifying an OpenMP Parallelization with the Intel Inspector XE [--] (talk+pr.)  
- 18:00 End 















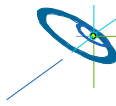
Rolf Rabenseifner
[1] Slide 10 (3d) Höchstleistungsrechenzentrum Stuttgart

H L R I S 

3-Day-Course — Oldenburg — 3rd day



Message Passing Interface (part 3)

- 9:00 **Parallelization of Explicit and Implicit Solvers** [38a] (talk) 
- 10:15 **Coffee**
- 10:30 **Chap. 11 One-sided Communication** [3, continued] (talk+practical 35min) 
- 12:00 **Lunch**
- 13:00 **Chap. 12 Shared memory one-sided communication** [3, 12] (talk+practical 30min) 
- 14:00 **Coffee**
- 14:15 **Chap. 13 MPI and Threads** [3] (short-talk) 
- 14:20 **Chap. 14, Parallel file I/O** [3, 11] (short-talk)   
- 14:30 **Chap. 15 Other MPI features / Summary** [3] (short-talk) 
- 14:50 **Coffee**
- 15:05 **OpenMP- 4.0 Extensions** [7a] (talk)  
- 15:50 **Access to the federal high-performance computing-centers** [9] (talk) 
- 16:20 **Coffee**
- 16:35 **PETSc Tutorial** [41] (talk) 
- 17:35 **Q&A**
- 18:00 **End**



Introduction Rolf Rabenseifner
[1] Slide 11 (3d) Höchstleistungsrechenzentrum Stuttgart

HLRS 

- : -- **Parallel programming models on hybrid systems / MPI+OpenMP** [23] (only handouts) 
- : -- **Laplace-Example with PETSc** [42a+c] (only handouts)  see also login-slides 