



3-Day-Course — JSC Jülich — 1st day

Message Passing Interface (MPI-1, part 1)


8:30 BUS SB11 ab Jülich, Neues Rathaus → 8:53 FZJ (Zugangsberechtigt. abholen, anschl. zu Fuß zum JSC)


9:00 **Registration**


9:20 **Introduction** [1] (talk) 

9:30 **Parallel Architectures and Programming Models** [2] (talk) 


10:20 **Coffee**

10:45 **MPI – Introduction to the Message Passing Interface** [3+3a] (talk) 


10:45 **Chap. 1 MPI Overview** (talk) 

11:10 **Chap. 2 MPI Process model** (talk+practical) 


12:30 **Lunch**



13:15 **Chap. 3 Messages and Point-to-Point Communication** (talk+practical) 

14:30 **Coffee**

14:45 **Chap. 4 Non-Blocking Communication** (talk+practical) 

16:00 **Coffee**

16:15 **Chap. 5 Derived Datatypes** (talk+practical) 

17:15 **Parallel debugging** [5] (talk)  

18:00 **Compute Systems at FZJ**

18:30 **End**



18:36 BUS SB11 ab FZJ Seecasino → 18:57 Jülich, Neues Rathaus


19:30 Social Event: **Restaurant Pinocchio**, Kleine Kö (Kölnstr.),
dies ist die Passage mit Eingang gegenüber vom Weihnachtsmarkt

3-Day-Course — JSC Jülich — 2nd day


Message Passing Interface (MPI-1, part 2) and OpenMP

8:30 BUS SB11 ab Jülich, Neues Rathaus → 8:58 FZJ Seecasino


9:10 **Access to the federal high-performance computing-centers** [9] (talk)  



9:30 **Chap. 6 Virtual Topologies** [3, continued] (talk+practical) 

10:40 **Coffee**


10:55 **Chap. 7 Collective Communication** (talk+practical) 

11:30 **Coffee**


11:45 **Chap. 8 Other MPI features** (talk) 


12:10 **Heat conduction program, a parallelization example with MPI** [6] (talk)  

12:30 **Lunch**


13:15 **OpenMP – Overview and execution model** [7+7a] (talk+practical) 

14:15 **Coffee**

14:30 **OpenMP – Work sharing directives** (talk+practical) 

15:45 **OpenMP – Data environment** (talk+practical) 

16:30 **Coffee**

16:45 **OpenMP – Summary and Pitfalls** (talk) 

17:40 **Verifying an OpenMP parallelization with the Intel Inspector XE** [8a] (talk)

18:30 **End**

18:36 BUS SB11 ab FZJ Seecasino → 18:57 Jülich, Neues Rathaus

19:05 **Direkt zum Weihnachtsmarkt** (gegenüber von Kleine Kö (Kölnstr.))


19:45 Nächtlich Besichtigung der **Zitadelle**, incl. Schloss-Innenhof [Torschluss 22.15]

20:30 **Abendessen**: Im „Liebevoll“ (Restaurant im Stadthotel)

3-Day-Course — JSC Jülich — 3rd day

MPI-2, PETSc and Performance Analysis


8:30 BUS SB11 ab Jülich, Neues Rathaus → 8:58 FZJ Seecasino

9:10 **One-sided communication** [12] (talk) 


9:40 **Parallel file I/O (basics)** [11] (talk+practical) 

10:35 **Coffee**

10:50 **Parallel file I/O (fileviews)** (talk+practical) 


11:50 **Parallel file I/O (access methods)** (talk) 

12:20 **Lunch**

13:10 **Parallel programming models on hybrid systems / MPI+OpenMP** [23] (talk) 

14:10 **Coffee**

14:25 **Parallel programming models on hybrid systems / MPI+OpenMP** [23] (continued) 

15:15 **MPI-3.0 Overview** [10a] (talk) 

16:00 **Parallel performance analysis and profiling** [16] (talk) 

16:30 **End**

ACHTUNG: Drei verschiedene Busse zu den drei Zielen!






16:36 BUS SB11 ab FZJ Seecasino → 16:38 Forschungszentrum Ruhrthalbahn (RTB)

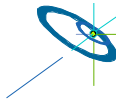
16:47 BUS SB11 ab FZJ Seecasino → 16:53 Jülich Bahnhof/ZOB (Ruhrthalbahn RTB)

16:47 BUS SB11 ab FZJ Seecasino → 17:33 Aachen Bushof

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

Only in the handouts:

- OpenMP-4.0 — Overview [7A] 
- MPI-2 Overview [10] 
- Parallelization of Explicit and Implicit Solvers [38a] 
- PETSc Tutorial [41] 
- Laplace-Example with PETSc [42a+c] 



H L R I S 

3rd day