

3-Day-Course — JSC Jülich — 1st day

Message Passing Interface (MPI-1, part 1)

8:30 BUS SB11 ab Jülich, Neues Rathaus → 8:55 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**

18:40 BUS SB11 ab FZJ Seecasino → 18:58 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 → 9:00 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 Thread Checker** [8a] (talk)

18:30 **End**

18:40 BUS SB11 ab FZJ Seecasino → 18:58 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 → 9:00 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 **PETSc Tutorial** [41] (talk)   

15:10 **Laplace-Example with PETSc** [42a+c] (talk+practical) 

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

16:30 **End**

16:47 BUS SB11 ab FZJ Seecasino → 16:49 Forschungszentrum Ruhrtalbahn (RTB) → 17:33 Aachen Bushof



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

H L R I S 

1st
day