

# An Introduction to HPC at the University Oldenburg

March 25 – 28, 2018 from 10:00 to 17:00 in room W1 0-008  
 given by Wilke Trei (UOL), Stefan Harfst (UOL) and Atanas Atanasov (Intel)

| Time          | Monday   | Tuesday   | Wednesday   | Thursday  |
|---------------|--|---|---|---|
| 10:15 – 11:15 | Introduction to HPC (SH) <ul style="list-style-type: none"> <li>• Motivation</li> <li>• Architectures</li> <li>• Overview CARL and EDDY</li> </ul>   | Intel Cluster Tools (AA) <ul style="list-style-type: none"> <li>• Compiler</li> <li>• Intel MKL</li> <li>• ThreadAnalyser</li> <li>• ...</li> </ul> | Introduction to Parallel Programming (SH) <ul style="list-style-type: none"> <li>• Overview over parallel models</li> <li>• Parallel Programming with OpenMP</li> </ul> | Introduction to Matlab on the local HPC-System (SH) <ul style="list-style-type: none"> <li>• Setting up the Client</li> <li>• Job submission</li> </ul> |
| 11:15 – 11:30 | Coffee Break   |   |   |   |
| 11:30 – 13:00 | Basic Usage of the HPC Cluster (WT) <ul style="list-style-type: none"> <li>• Job Scheduler SLURM</li> <li>• Basic Use of SLURM</li> <li>• Exercise SLURM</li> </ul>                        | Intel Cluster Tools (AA) <ul style="list-style-type: none"> <li>• (cont'd)</li> </ul>   | Parallel Programming with OpenMP (WT) <ul style="list-style-type: none"> <li>• Examples and Exercises</li> </ul>  | Parallel Programming in Matlab (SH) <ul style="list-style-type: none"> <li>• Parfor</li> <li>• Examples</li> </ul>                                      |
| 13:00 – 13:45 | Lunch Break  |   |   |   |
| 13:45 – 15:15 | HPC Environment (SH) <ul style="list-style-type: none"> <li>• File Systems</li> <li>• Software and Modules</li> <li>• Compiler and Toolchains</li> <li>• Examples and Exercises</li> </ul> | Intel Cluster Tools (AA) <ul style="list-style-type: none"> <li>• (cont'd)</li> </ul>   | Parallel Programming with OpenMP (WT/SH) <ul style="list-style-type: none"> <li>• Examples and Exercises</li> </ul>   | Parallel Programming in Matlab (SH) <ul style="list-style-type: none"> <li>• SPMD</li> <li>• Examples</li> </ul>  |
| 15:15 – 15:30 | Coffee Break   |   |   |   |
| 15:30 – 17:00 | Advanced SLURM (SH) <ul style="list-style-type: none"> <li>• Job Arrays</li> <li>• Examples and Exercises</li> </ul>   | Intel Cluster Tools (AA) <ul style="list-style-type: none"> <li>• (cont'd)</li> </ul>   | Performance Optimization (SH) <ul style="list-style-type: none"> <li>• Examples and Exercises</li> </ul>  |   |