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JUPITER - Exascale computing in Germany

physikalisches

Mo. 2.12.24
16:00 Uhr
Ort: H34

I will present the exascale system JUPITER of Jülich Supercomputing Centre (JSC), which is currently under construction. JUPITER will be the first exascale system in Europe and is expected to be fully operational in early 2025. As a joint European and German effort, JUPITER will provide computing resources to the diverse European and German scientific communities.

After a brief history of the project, I will discuss the benchmarking that led to the winning architecture, and then describe the system architecture and performance results of early porting efforts. By providing over one exaflop of performance, JUPITER will increase the computing power currently available at the three Tier-0 Gauss centers by about a factor of six, while increasing the resources of the JSC by about a factor of twelve. Such an abrupt increase poses a challenge to the user communities to adapt their software suites to take full advantage of JUPITER.

I will briefly outline JSC's approach to support the user communities in their efforts through our JUREAP program. Finally, I will present several other architectures deployed or planned at JSC, ranging from quantum computing to novel accelerators and neuromorphic architectures.



The modular data center housing FZJ's JUPITER (Credit: EVIDEN & Forschungszentrum Jülich).