

# Overview

JSC OpenACC Course 2017

Andreas Herten, Forschungszentrum Jülich, 16 October 2017

- Forschungszentrum Jülich
- Part of Institute for Advanced Simulation (IAS)
- Operates supercomputers and connected infrastructure
- Researches in next-gen supercomputers
- Supports applications leveraging machines
- Supercomputers
  - JUQUEEN
  - JURECA
  - DEEP
  - JURON/JULIA
  - Former: JUROPA, JUGENE, JUDGE

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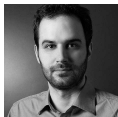
- #80 in TOP500 list
- 1872 nodes (Intel Haswell CPUs,  $2 \times 12$  cores)
- ↳ 75 nodes with 2 NVIDIA K80 GPUs  
(each  $2 \times 2496$  CUDA cores,  $2 \times 12$  GB memory)



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  - OpenCL: 21.11.2017
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- Tutors of this course



**Jiri Kraus**

NVIDIA Application Lab  
at Jülich, NVIDIA



**Anke Kreuzer**

Division *Technology*,  
JSC



**Andreas Herten**

NVIDIA Application Lab  
at Jülich, JSC



Session	Day 1	Day 2
M1	Introduction to GPU Programming <i>Andreas</i>	Performance Optimization <i>Jiri</i>
<i>B</i>	<i>Coffee Break (10:45 - 11:00)</i>	
M2	OpenACC Programming Model <i>Anke</i>	Interoperability of OpenACC <i>Andreas</i>
<i>B</i>	<i>Lunch Break (12:30 - 13:30)</i>	
A1	OpenACC Programming Model <i>Anke</i>	Multi-GPU Programming <i>Jiri</i>
<i>B</i>	<i>Coffee Break (15:00 - 15:30)</i>	
A2	Tools for Debugging & Profiling <i>Andreas</i>	Multi-GPU Programming <i>Jiri</i>

- Please sign Attendance List!
- Morning/afternoon breaks: Coffee machine around the corner and upstairs
- Lunch breaks: In canteen (*Casino*)
  - Need to buy payment cards on machine
  - Use machine with slot for entering cards, they provide Guest Cards!
  - 5 € deposit needed, returned when returning card on Tuesday
  - Participants from FZJ will surely help you!
- Interactive course!  
Lots of hands-on in different tasks!

- Supercomputers for this course: **JURECA**
- Infrastructure for tasks
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  - Password on whiteboard
  - Valid for local computer **and** JURECA

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- Tasks
  - Tasks are in home directory of supercomputers → best to solely work on JURECA
  - Sorted by session
  - Solutions are always given, you decide how long you tinker before peaking into solutions  
(Hint: The later, the more benefit you will get from this course!)
  - There's a cheat sheet for the most important commands!

# Let's Get Started!

## Questions?