

Linux kernel on FPGA

- **Speakers:** Daniel Kluss, Emily Johnson
- **Room:** HC 204
- **Time:** Sun 10:25 am – 11:25 am
- **Format:** Panel
- **Difficulty:** Introductory / Some experience required / Expert
- **Track:** Development & Dev Tools
- **Additional Tags:** Networks, Hardware
- **Presenter Location:** In-person
- **Experience:** umpteenth time speaking

Description:

This panel explores how to map **FPGA PCIe address space directly into user mode** to bypass portions of the Linux kernel, enabling extremely high-performance data paths. Daniel and Emily will discuss the architectural considerations, challenges, and benefits of this approach, along with real-world applications where kernel bypass techniques dramatically improve throughput and latency.

Attendees will gain insight into how FPGAs interface with Linux, what it takes to safely expose hardware resources to user space, and why developers might choose this model for specialized workloads.

Target Audience:

- Developers working with FPGAs
- Kernel and systems programmers
- Hardware and networking engineers

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