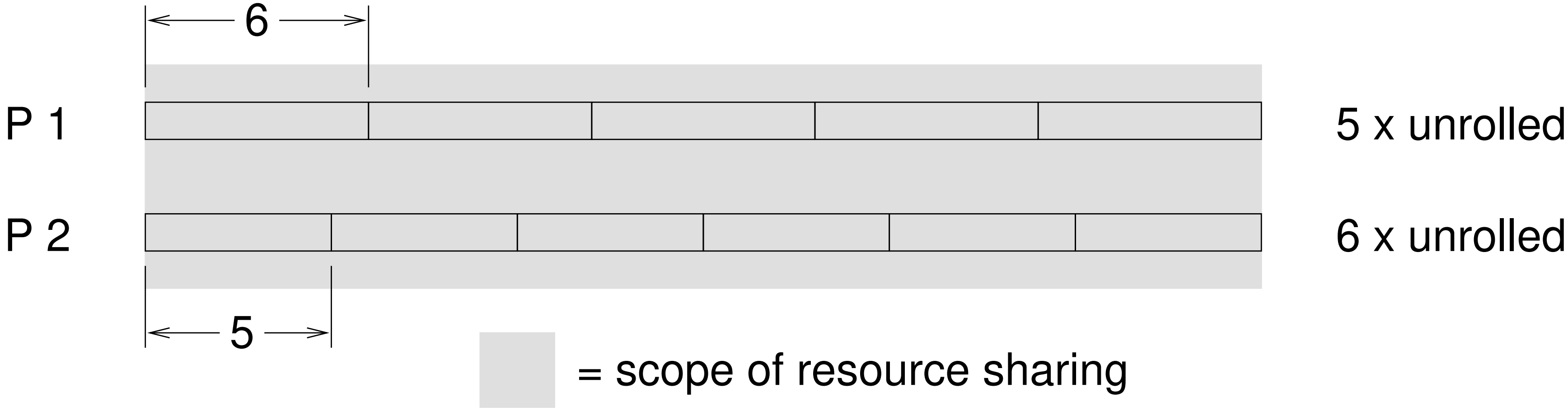
Resource Constrained Modulo Scheduling with Global Resource Sharing

Christoph Jäschke

Institute for Electromagnetic Theory and Microelectronics
University of Bremen · Germany

Traditional Multi-Process Resource Sharing

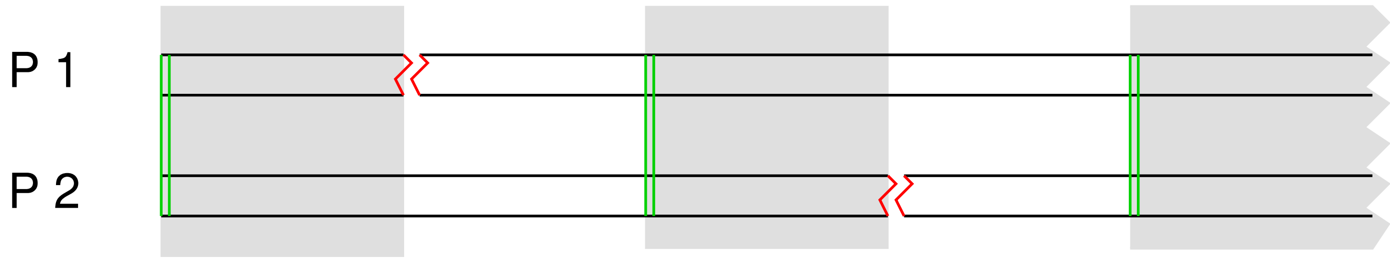
a) process merging techniques



- only fixed process latencies allowed (simple control flow)
- possibly very high controller complexity

\+ resource sharing allways possible

b) exploiting synchronizing operations



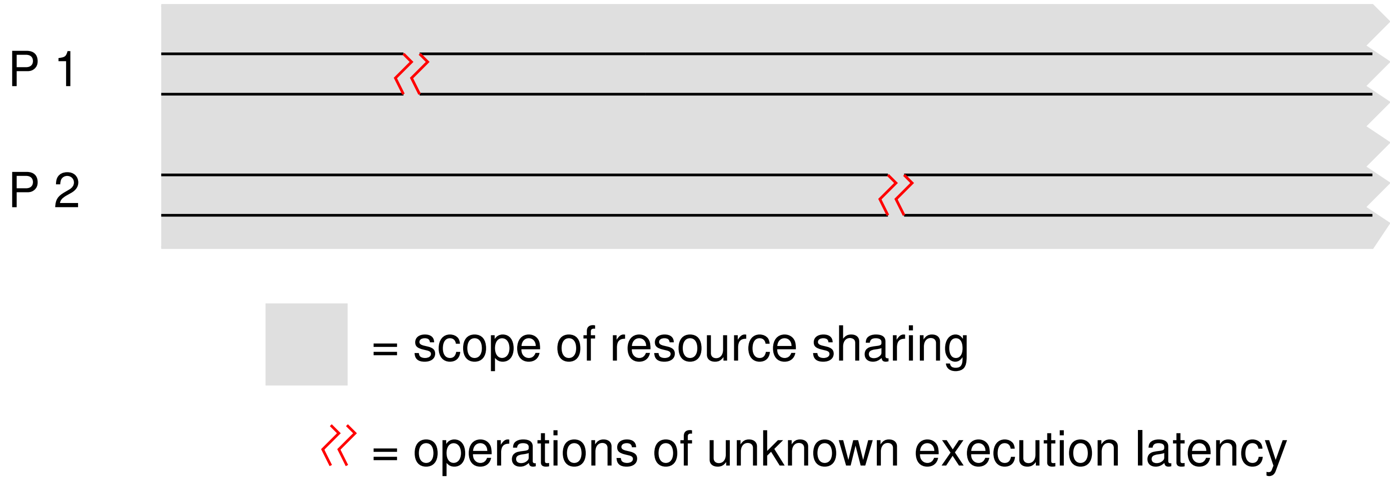
= scope of resource sharing

= synchronization = desynchronization

- resource sharing only from synchronizing operations until operations of unknown execution latency

+ variable process latencies allowed (complex control flow)

Resource Sharing using Modulo Scheduling



+ resource sharing allways possible
+ variable process latencies allowed (complex control flow)