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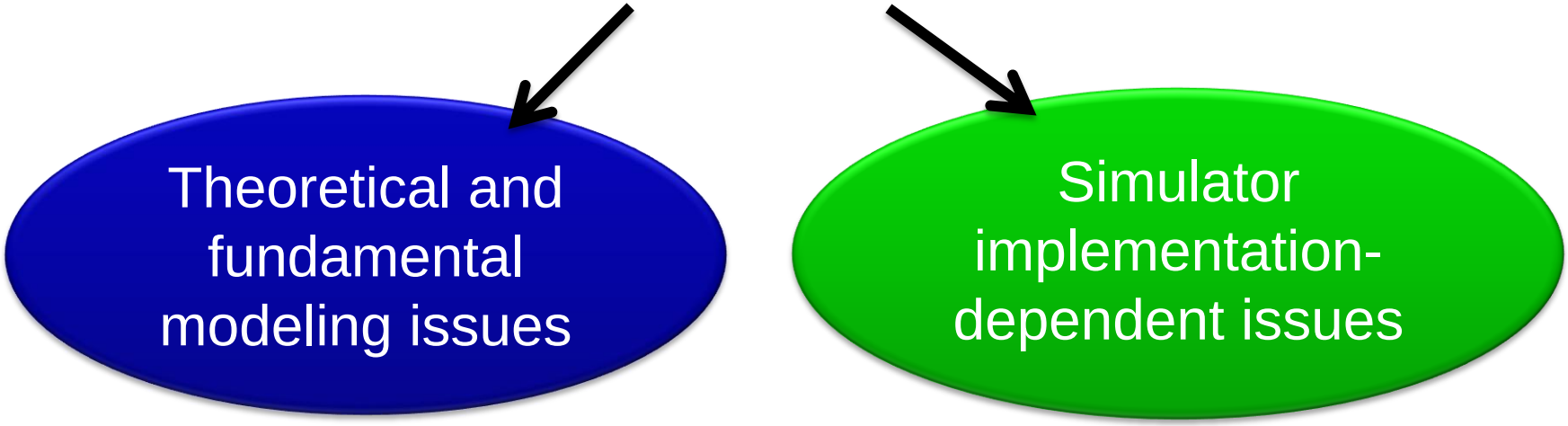
- General topic: *Definition of the notions of component and abstraction-level for TLM*
  - How to write models that are *correct* by construction?
  - How to avoid common modeling errors?
  - How to integrate models so that they “work” together?



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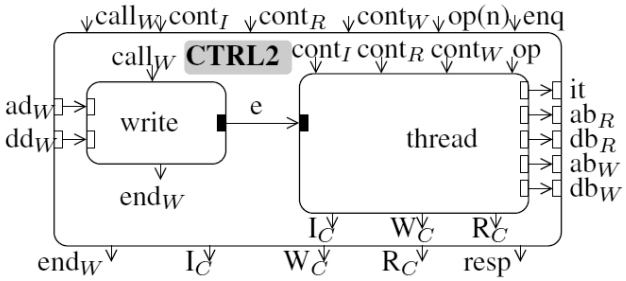
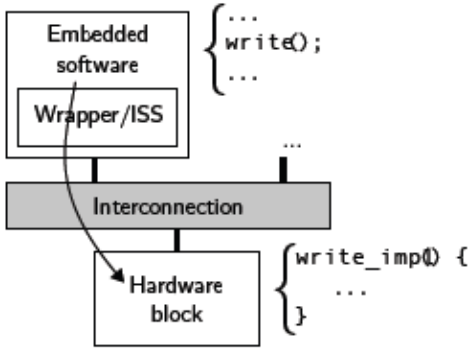
Theoretical and fundamental modeling issues

- *Formal and Executable Contracts for TLM in SystemC* (EMSOFT'09)



- Connection between formal approach and SystemC
- Enables reasoning about composition even if only part of the platform is implemented

- *Faithfulness Considerations for Virtual Prototyping of Systems-on-Chip* (RAPIDO'11)
  - Some micro-architectural features (caches, fifos, reordering pipelines, prefetch buffers) can impact the behavior of software in a virtual prototype



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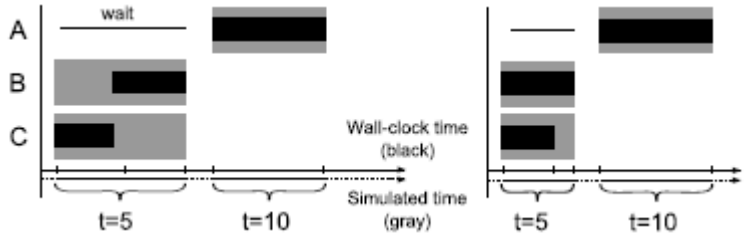
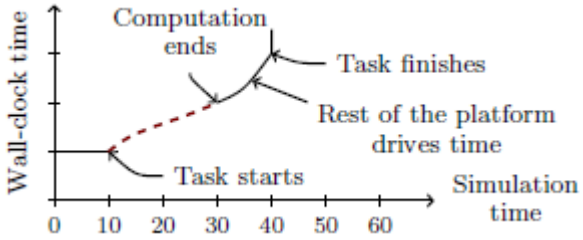
Simulator implementation-dependent issues

- *jTLM: an Experimentation Framework for the Simulation of TL Models* (DATE'11)
  - A framework for research on issues that originate or depend on a particular simulator implementation choice
  - e.g. `wait(SC_ZERO_TIME)`
  - Cooperative/preemptive, sequential/parallel



- *Modeling of Time in Discrete-Event Simulation of Systems-on-Chip* (submitted to MEMOCODE'11)



- Propose new semantics and primitives for modeling time
- Tasks with a known or unknown duration (SystemC has only instantaneous tasks and delays)