Motivation

Network-on-Chip

Temperature related Issues

- Promising properties to overcome or mitigate current issues:
  - Modularity
  - Encapsulation
  - Portability
  - Reuse
  - Scalability
  - Parallelism

- Power consumption.
- Leakage currents.
- Reliability.
- Electromigration.
- Time Dependent Dielectric Breakdown.
- High temperatures accelerate all of these

Need for a generic, flexible, fine grained
temperature model.

Simulation flow based on a generic RC-grid

Exemplary application scenario

Future Work

- Adjusting electrical parameters
- Investigations on accuracy vs. simulation speed
- Integration into existing NoC simulators
- (Acceleration using graphic processing units)
- Evaluation of:
  - Control algorithms
  - Mapping algorithms
  - Routing algorithms

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