Research Topic Introduction
Res Informatica Seminar

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CHARLES UNIVERSITY IN PRAGUE
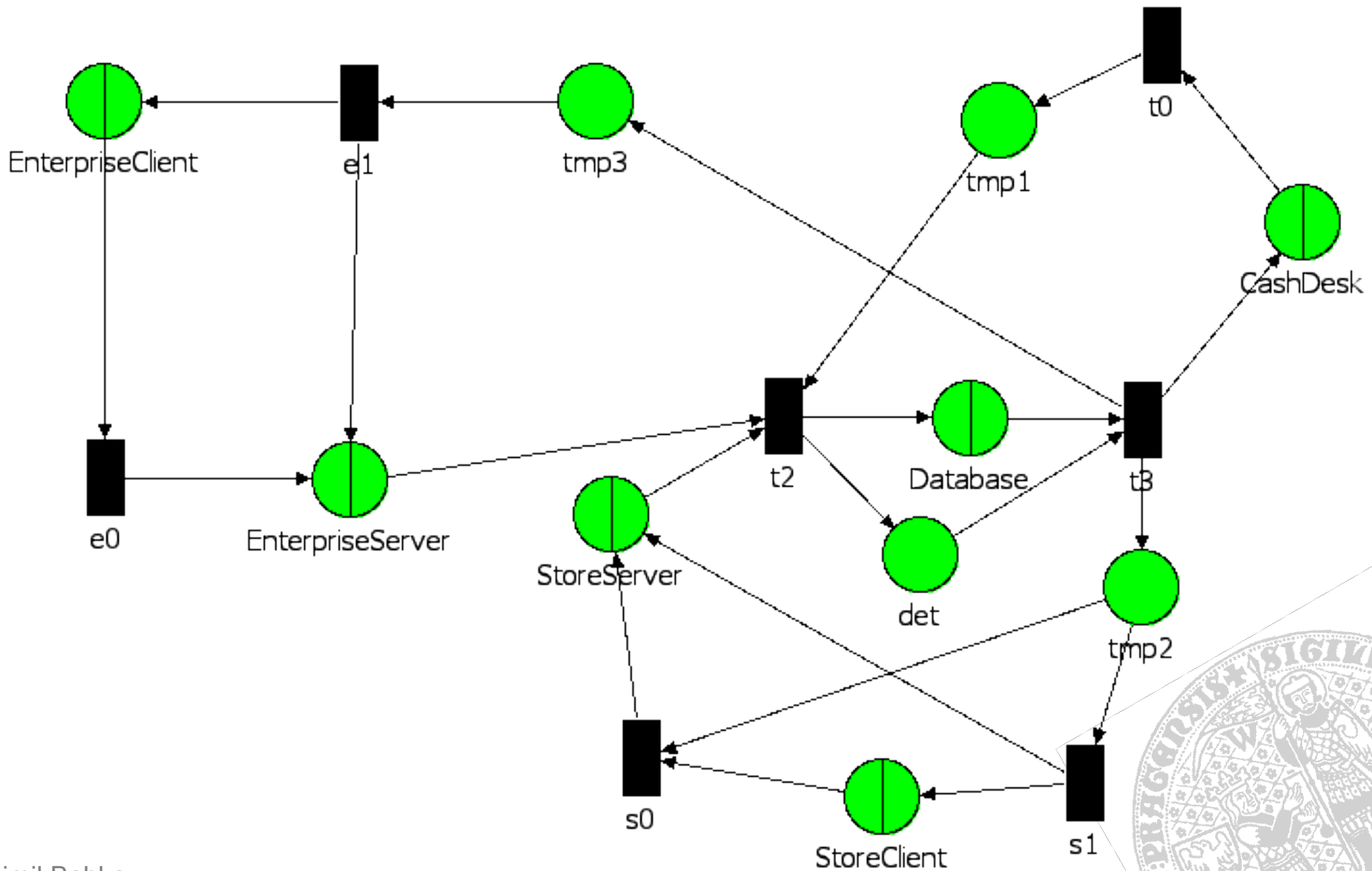**FACULTY OF MATHEMATICS AND PHYSICS**

Research Area

- Performance Evaluation
    - Benchmarking
    - Monitoring
    - Profiling
    - Performance change detection
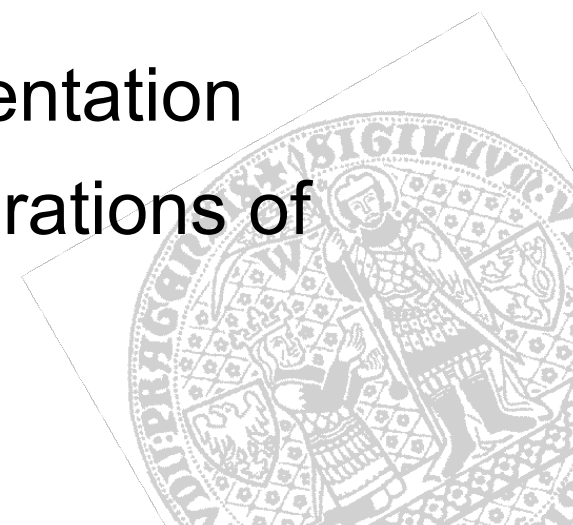   - **Performance modeling**
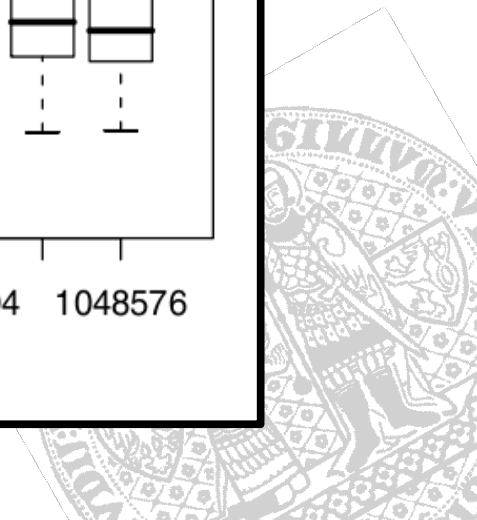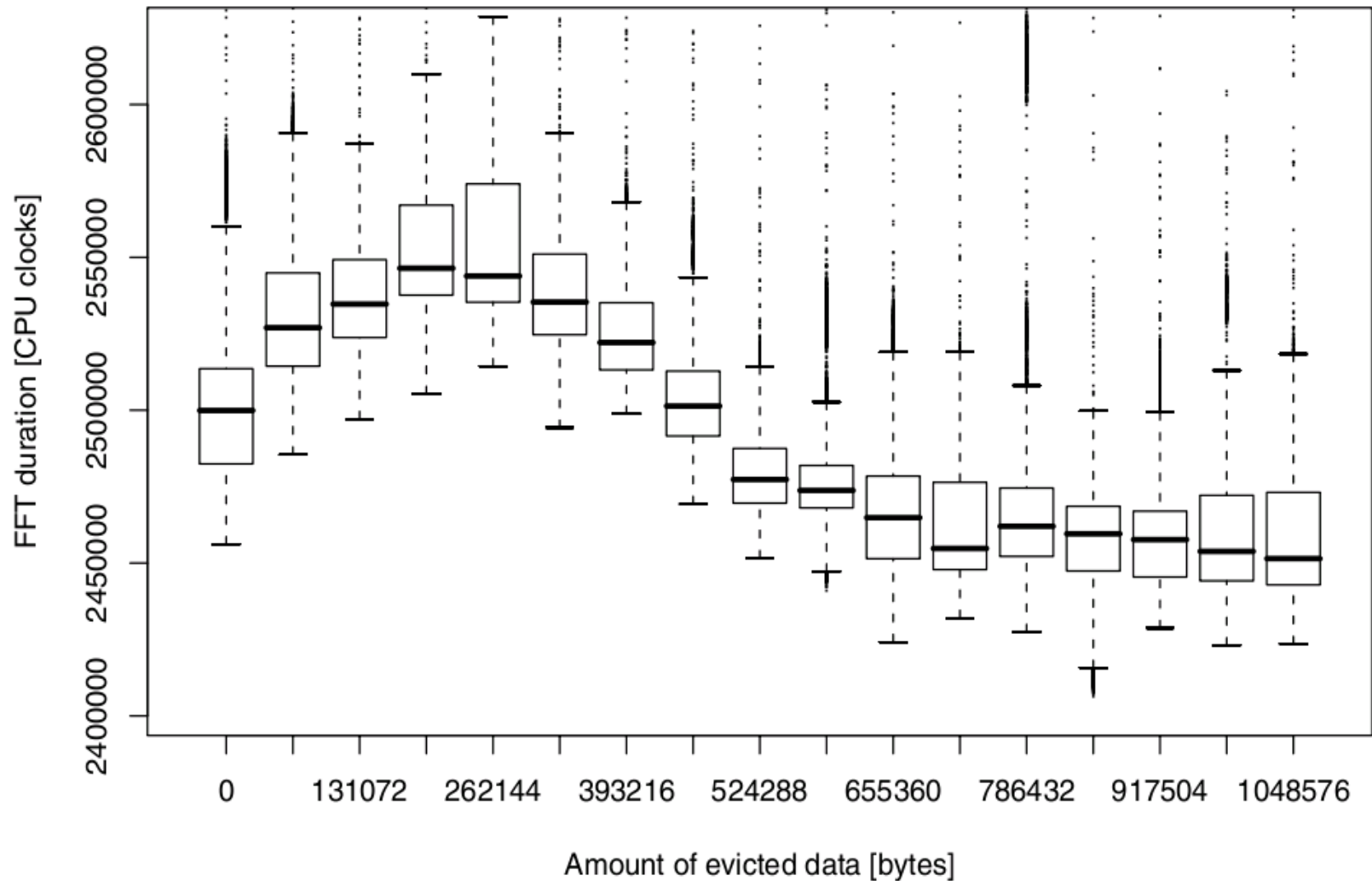
Performance Models (Example: QPN)

Performance Models

- Abstraction of the system
  - Interactions of atomic actions
  - Durations of actions often fixed
    - Measured in isolation / fixed conditions

- Contemporary computer systems
  - Many performance-related resources
    - **Processor caches**
  - Complex behavior, sparse documentation
  - Sharing affects performance → durations of atomic actions

Ex.: Unexpected Cache Sharing Impact

FFT routine timing with interfering cache eviction

Goal

- Create (improve existing) models of resource sharing

    - Cache sharing: include penalties, not just number of misses

- Incorporate into performance models of systems

    - Use information from performance model as input for resource sharing model

    - Adjust timings of atomic actions accordingly