Performance of auto-calibration algorithms in the field of urban drainage modelling

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Challenges

- Model calibration is a time consuming and complex task
- Calibration algorithms: LM, PSO, GA,...
- Objective functions: E,SSE,...
- Testing of possible solution candidates and evaluating one or several objective functions
- Find global optimum within the fitness landscape which is defined by objective functions

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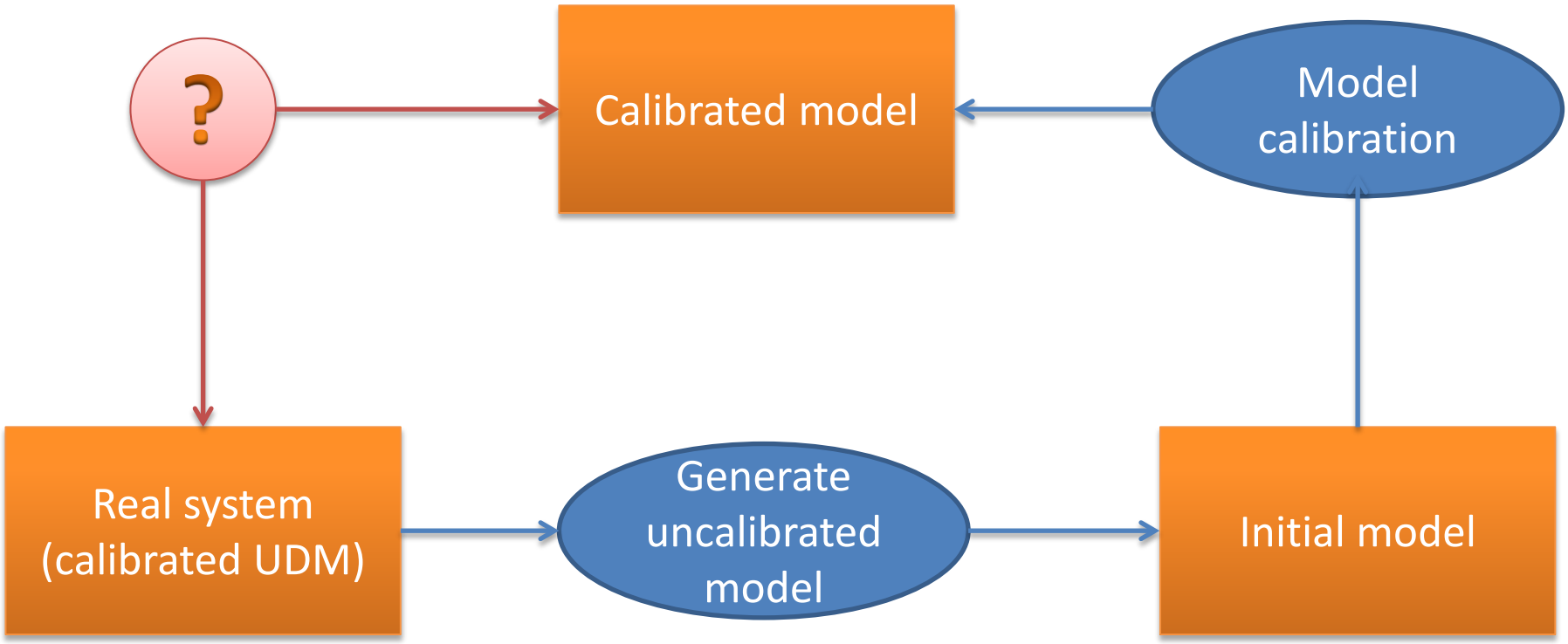
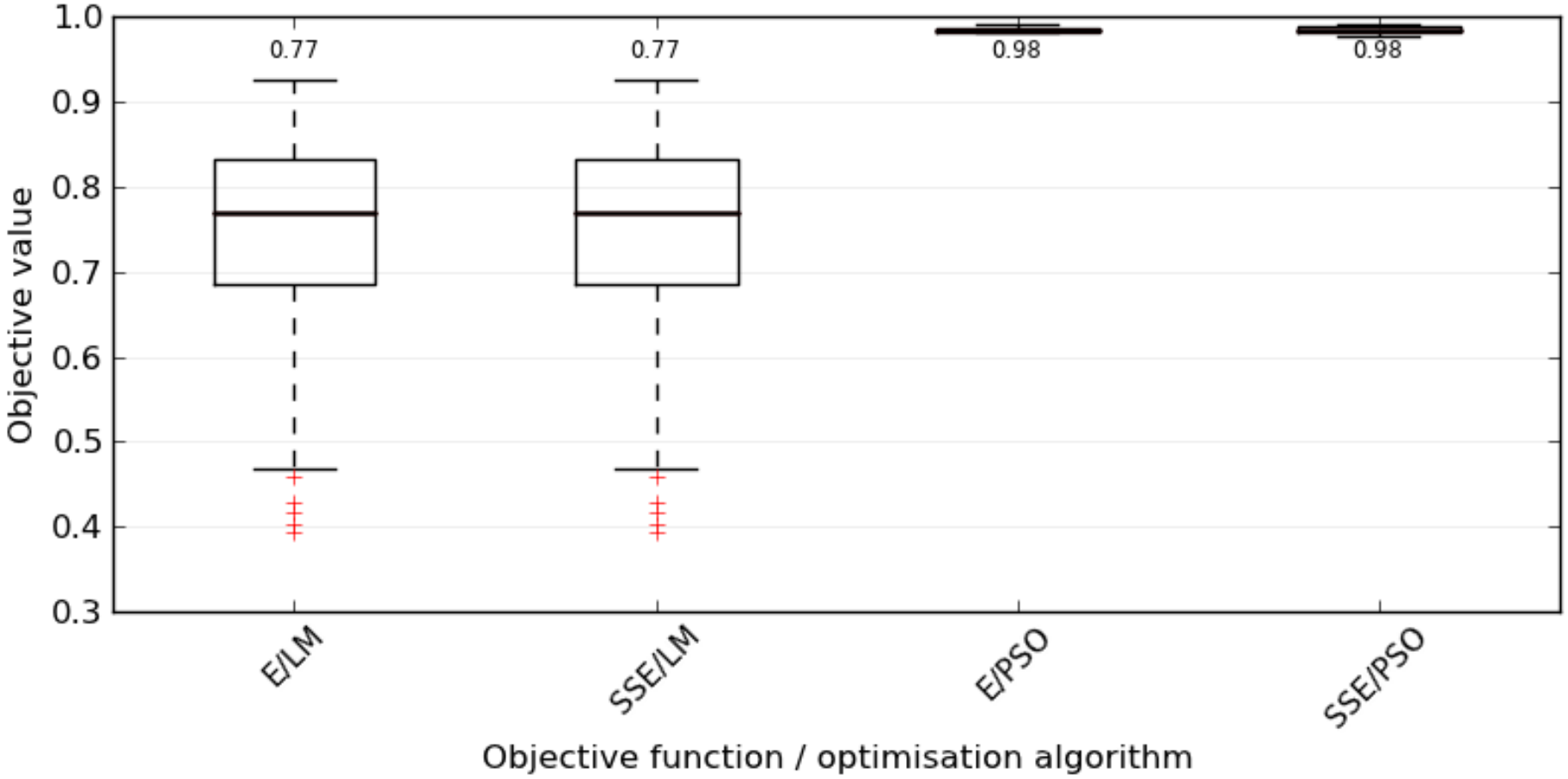
Performance:

- **Number of needed iterations within a calibration ? (Speed)**
- **Impact of objective function on computational performance ? (Speed)**
- **Ability to identify the optimum ? (Accuracy)**

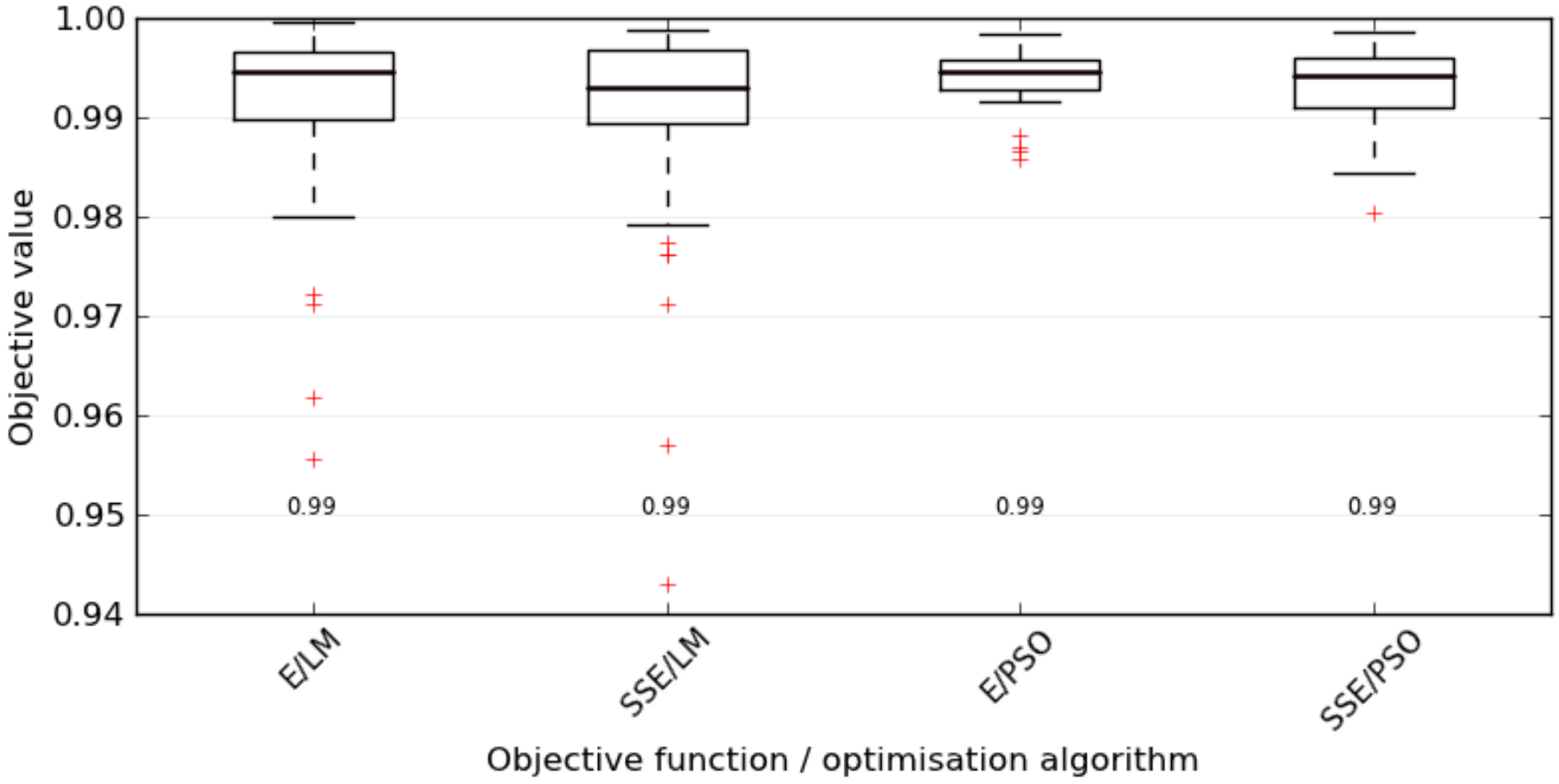
Benchmark system



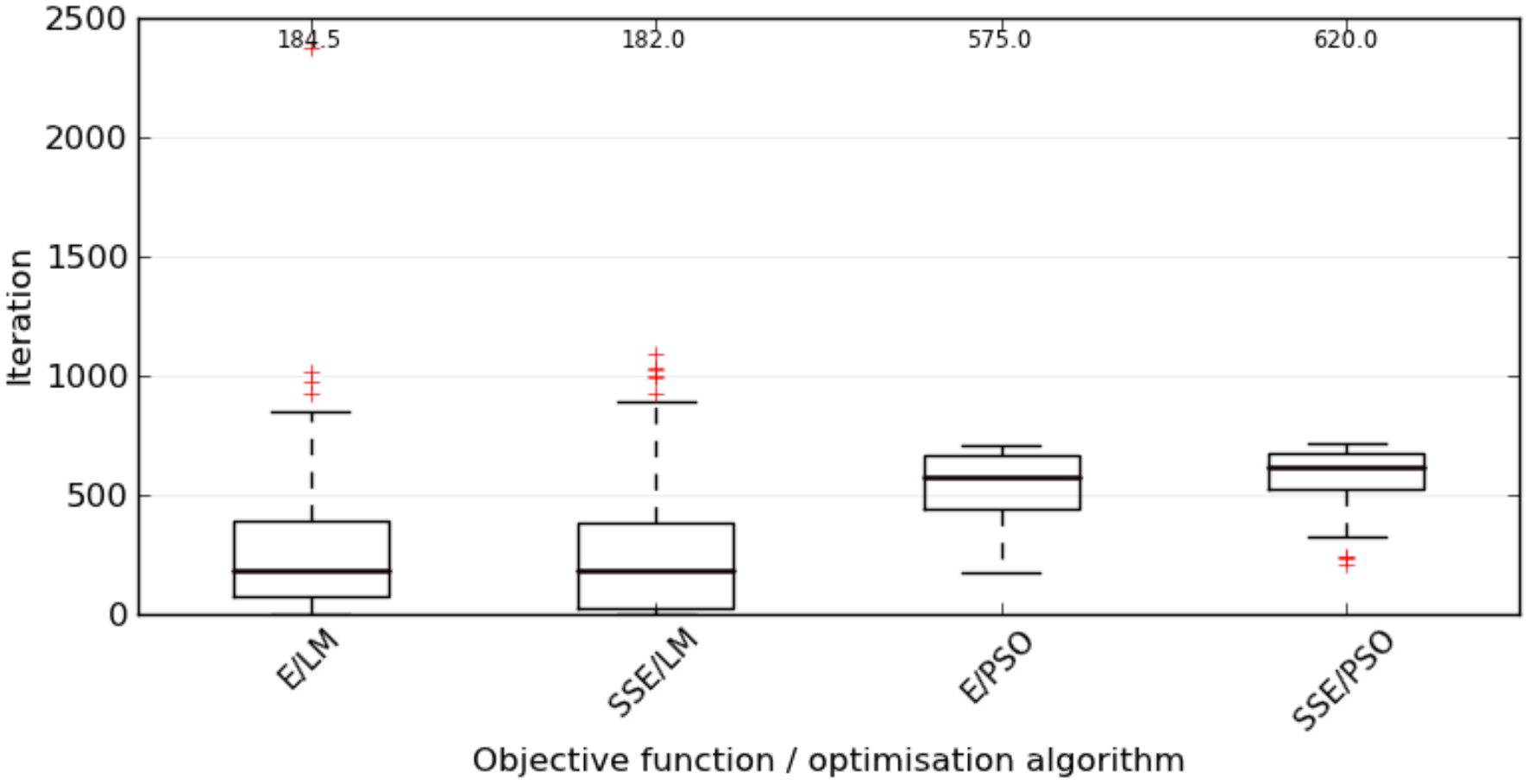
Generated uncalibrated models



Results after model calibration



Number of iterations



Summary

Automatic performance tests of calibration algorithms with different objective functions

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Model independent (using Calimero framework)

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PIs: Computational performance and accuracy of calibration

Thank you

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