

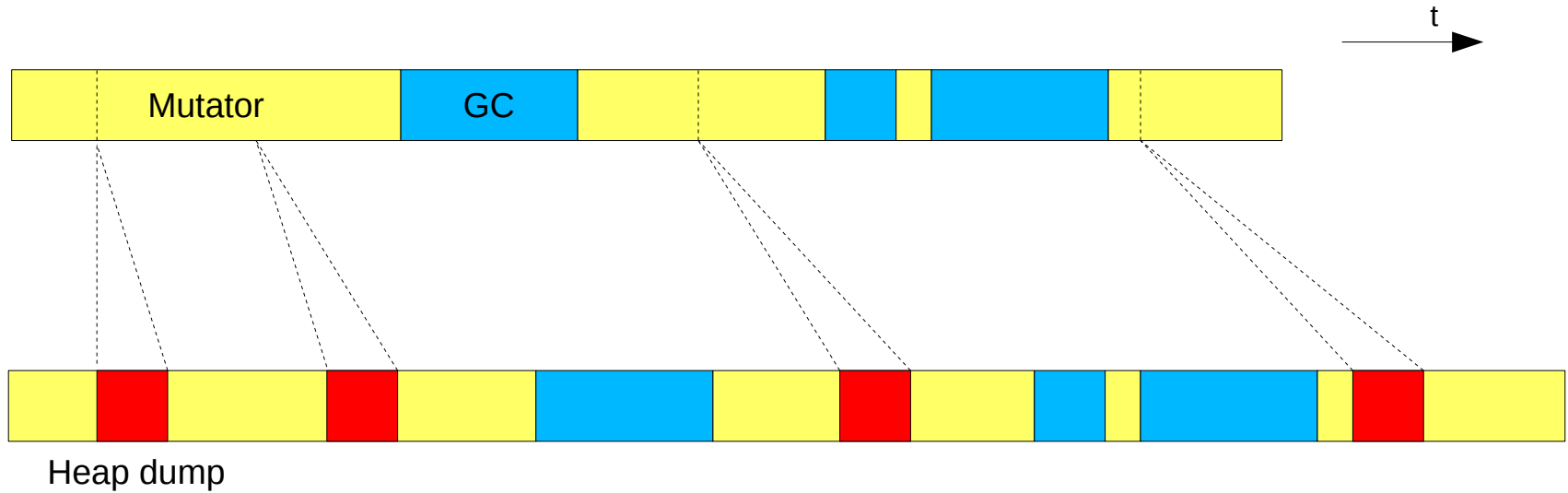


# Application Behavior Distortion (Observer Effect in Memory Monitoring)

Verena Bitto  
Philipp Lengauer

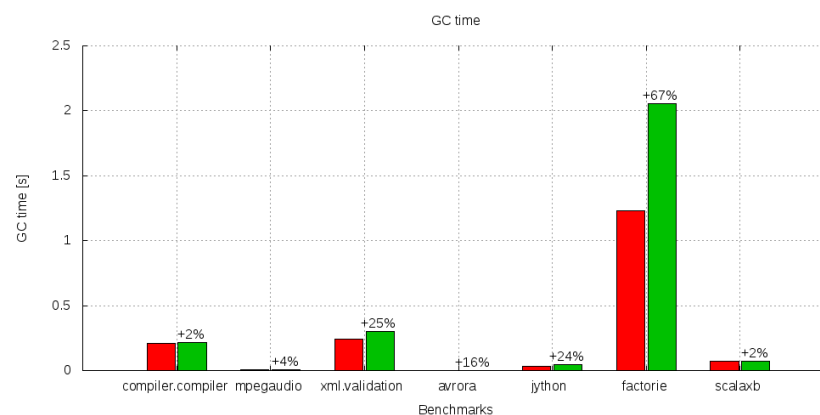
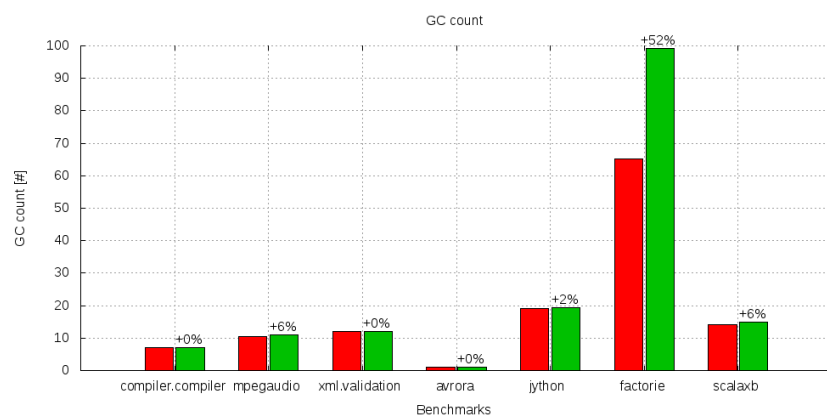
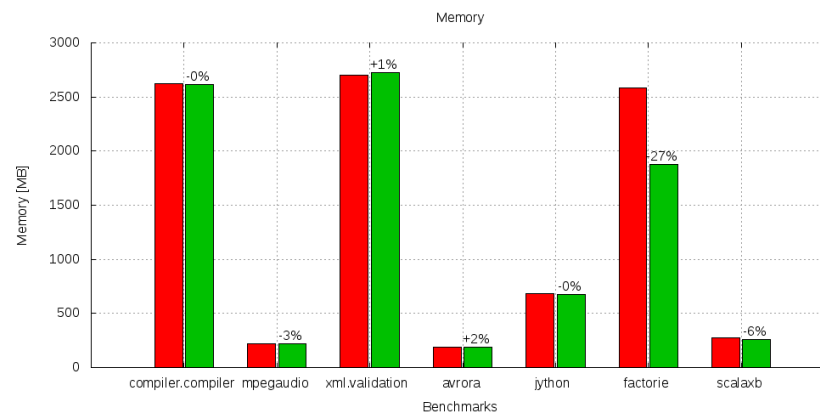
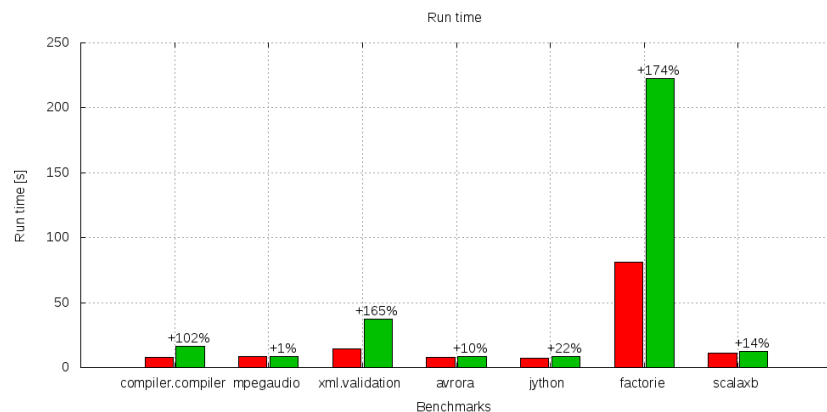
2016-03-13

*Measuring a system changes the system!*

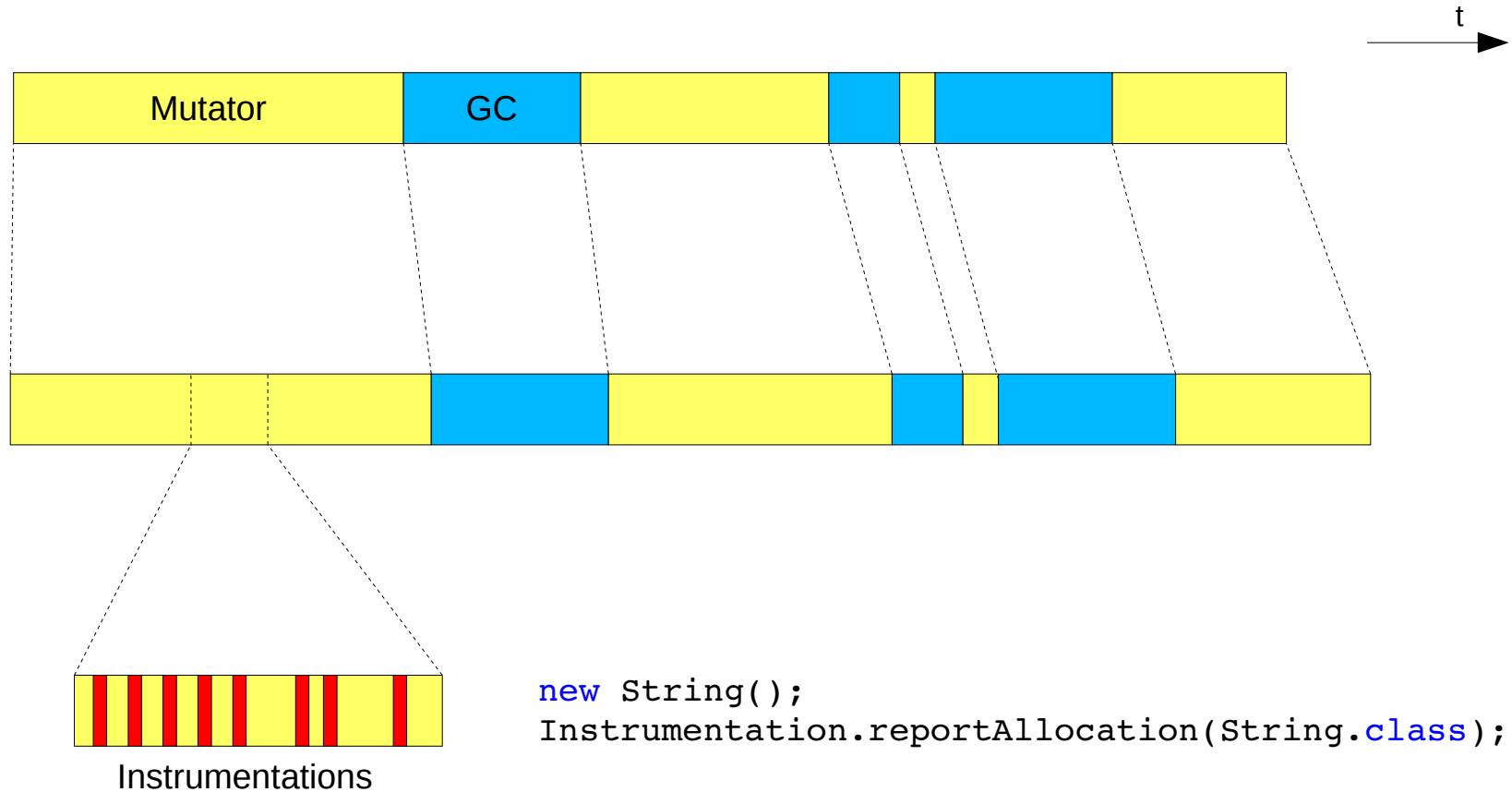


*High sampling frequency introduces pauses in mutator phases and increases overall run time.*

# Sampling Experiment

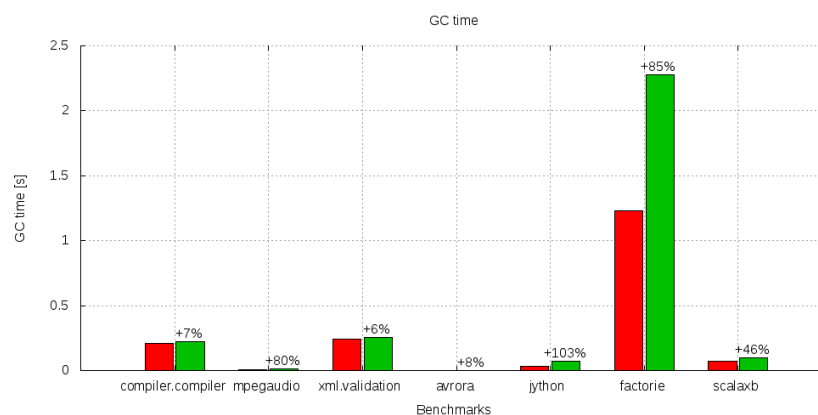
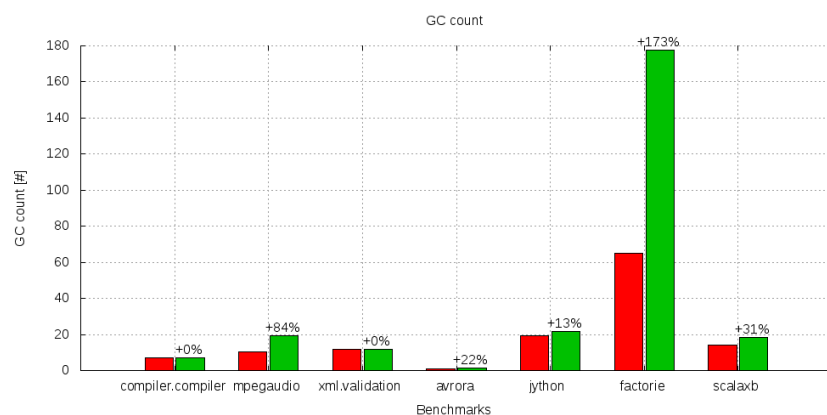
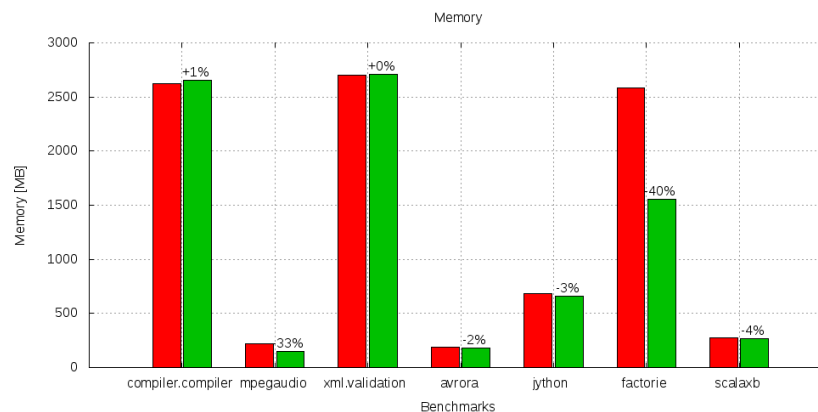
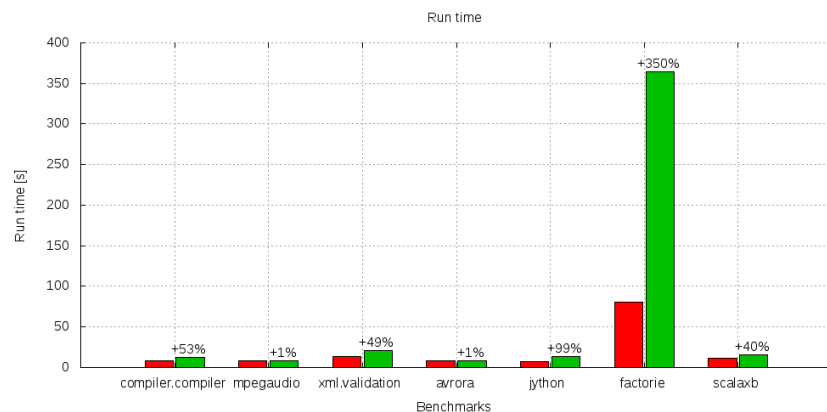


# Instrumentation - Allocations

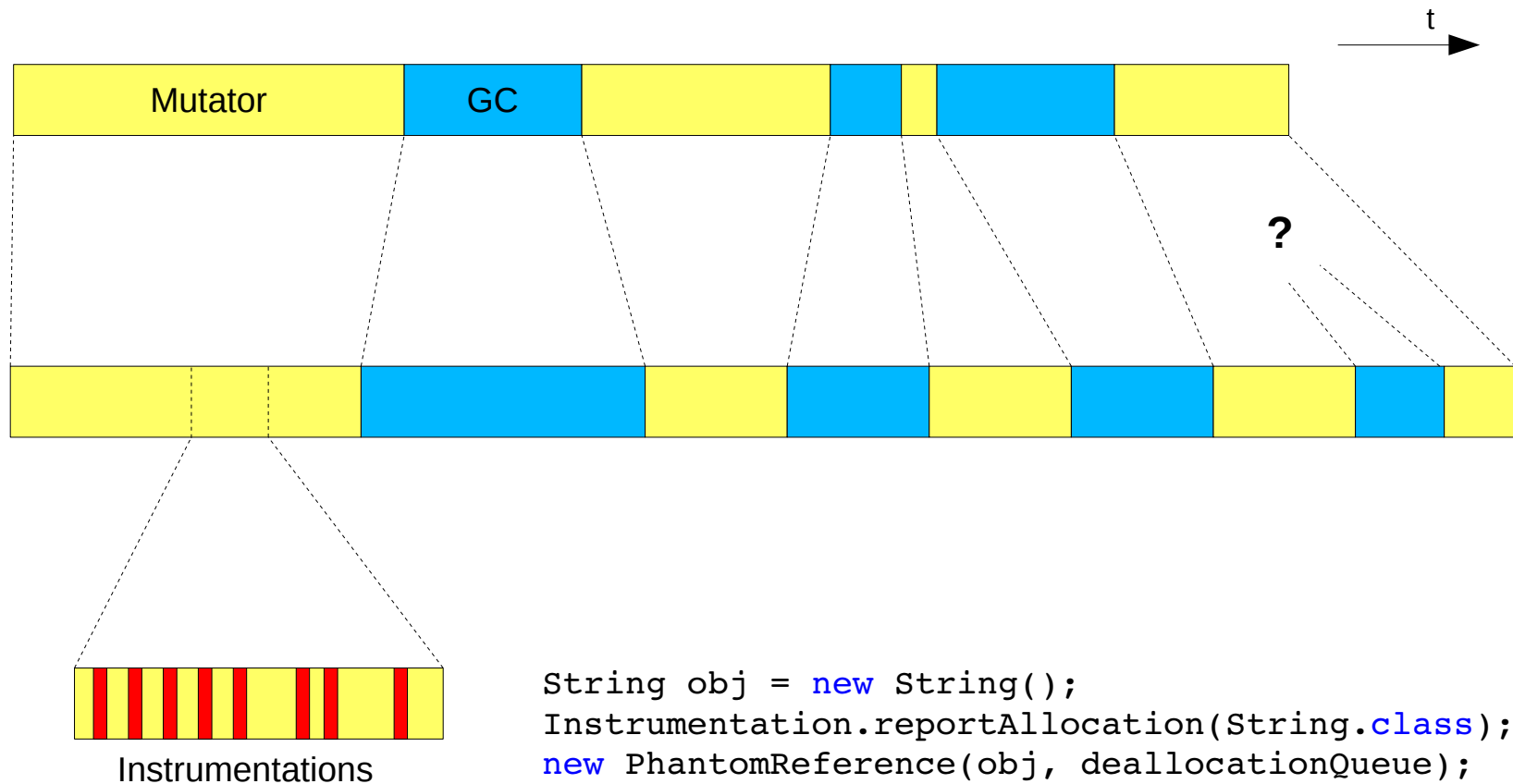


*Instrumentation makes allocations more expensive, increasing overall run-time.*

# Instrumentation Experiment



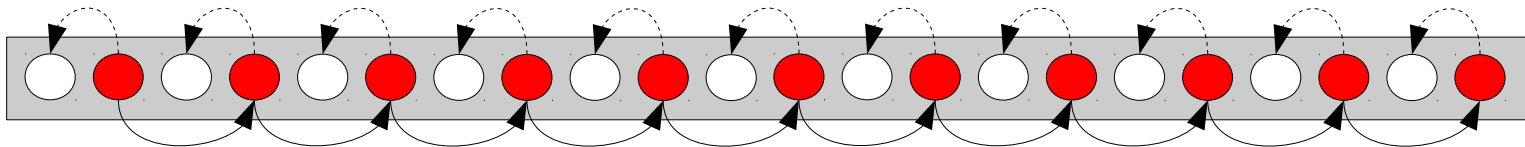
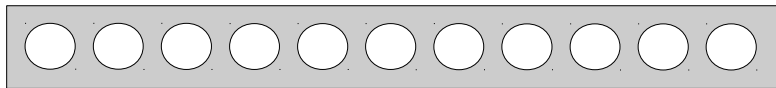
# Instrumentation – Deallocations (Run Time)



*Instrumentation may change the run-time to GC-time ratio.*

# Instrumentation – Deallocations (Memory)

Heap



 Phantom reference

*Instrumentation effectively doubles the amount of live objects, at least doubling GC time.*



# Instrumentation (Deallocation) Experiment

