

Figure 1: timing-pattern

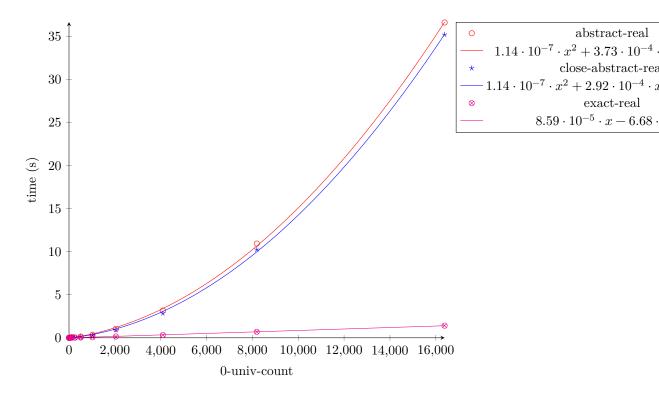
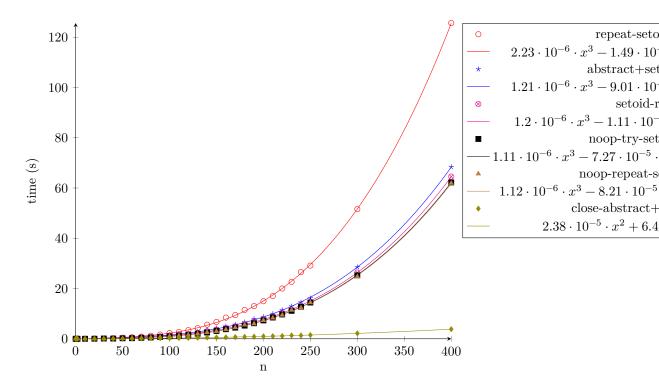
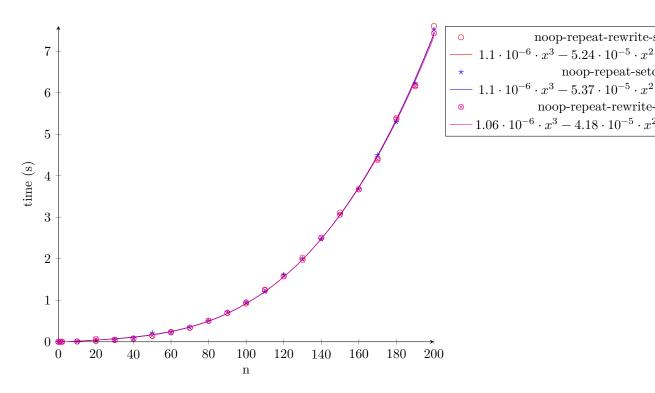


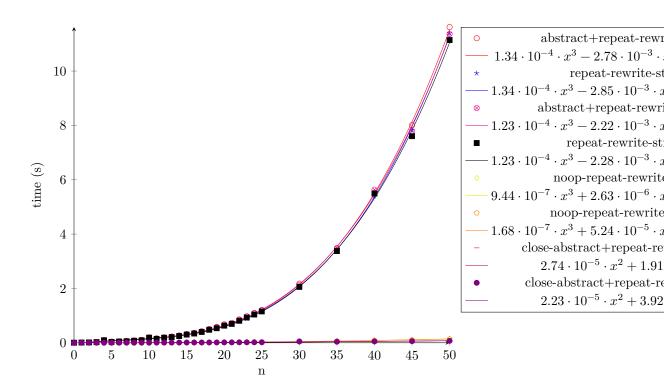
Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$



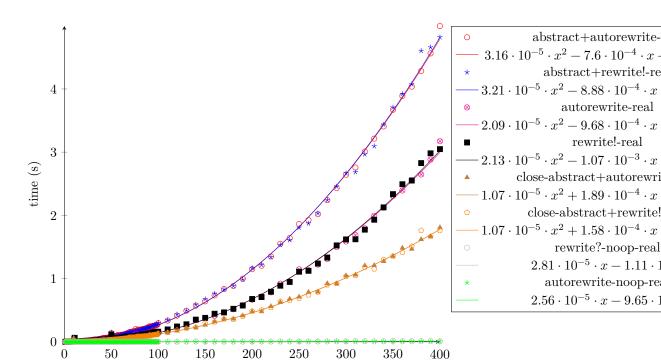
 $Figure \ 3: \ timing-repeat-setoid-rewrite-under-binders$



 $Figure\ 4:\ timing-repeat-setoid-rewrite-under-binders-noop$

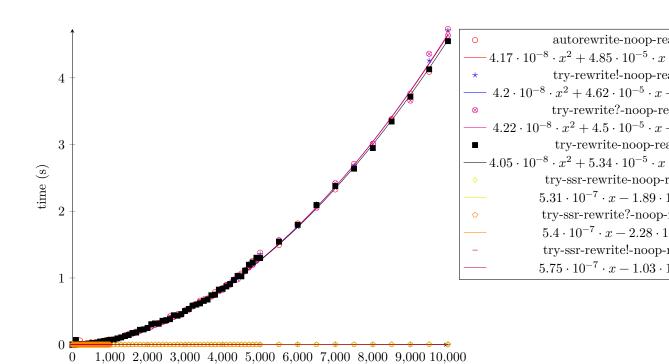


 $Figure\ 5:\ timing-rewrite-strat-under-binders$



 $Figure \ 6: \ timing-rewrite-repeated-app-autorewrite \\$

n



 $Figure~7:~timing\mbox{-rewrite-repeated-app-autorewrite-noop}$

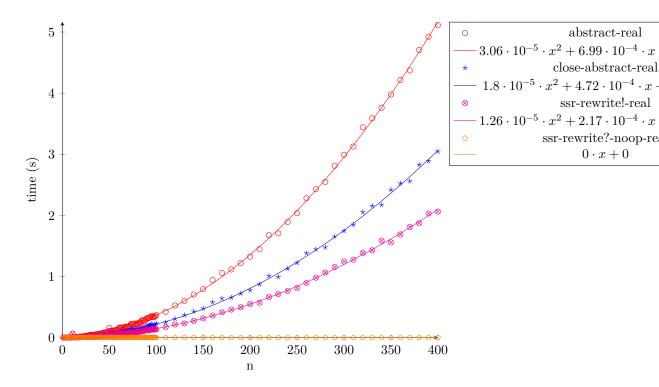


Figure 8: timing-rewrite-repeated-app-ssrrewrite

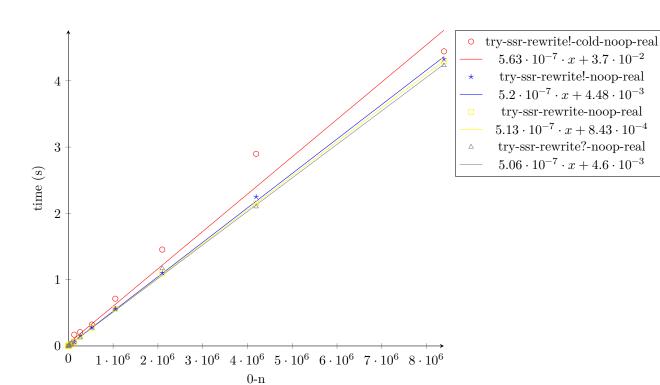
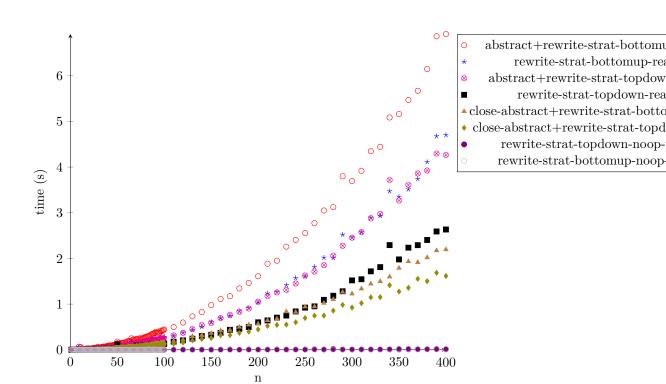


Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn $\ 1$



 $Figure~10:~timing\mbox{-rewrite-repeated-app-rewrite-strat}$

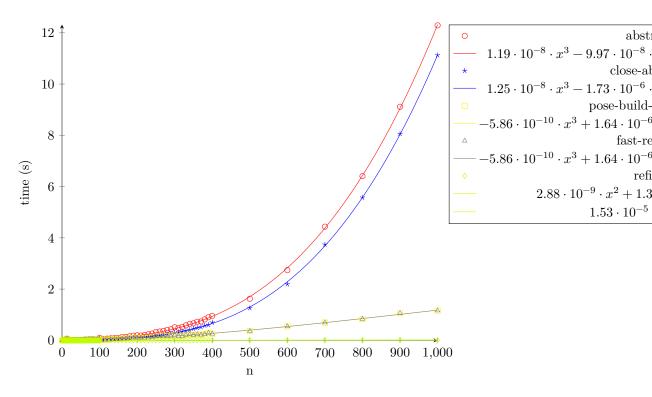
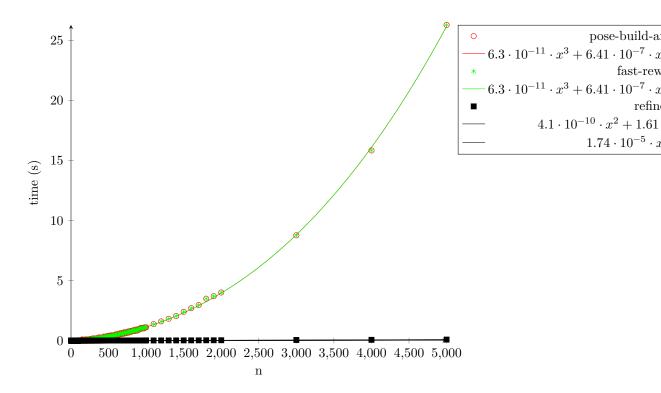


Figure 11: timing-rewrite-repeated-app-fast-rewrite



Figure~12:~timing-rewrite-repeated-app-fast-rewrite-no-abstract

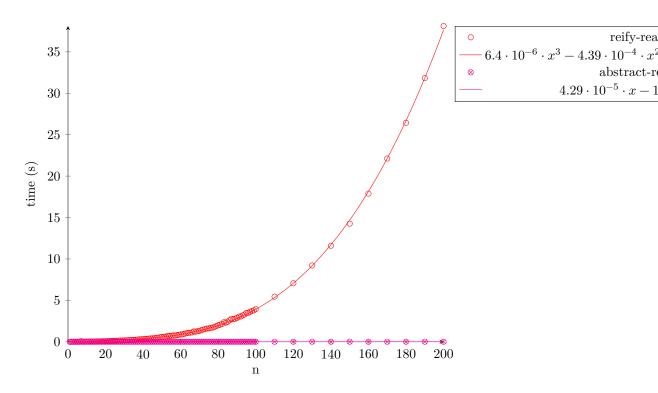


Figure 13: timing-typeclass-reification-let-in-HOAS

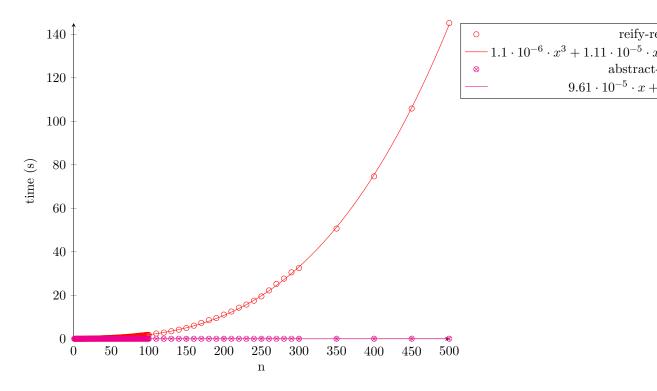


Figure 14: timing-typeclass-reification-let-in-PHOAS

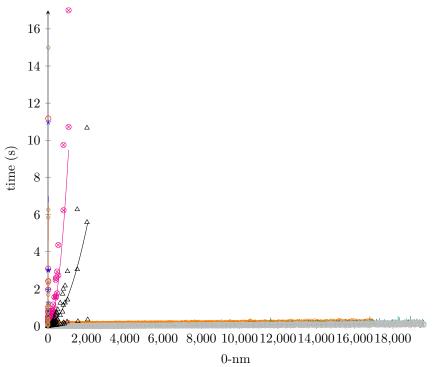


Figure 15: timing-rewrite-lift-lets-map param-1-n 1, param-2-m 1

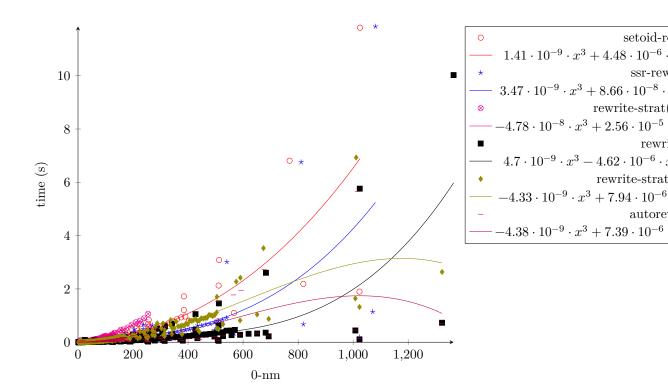
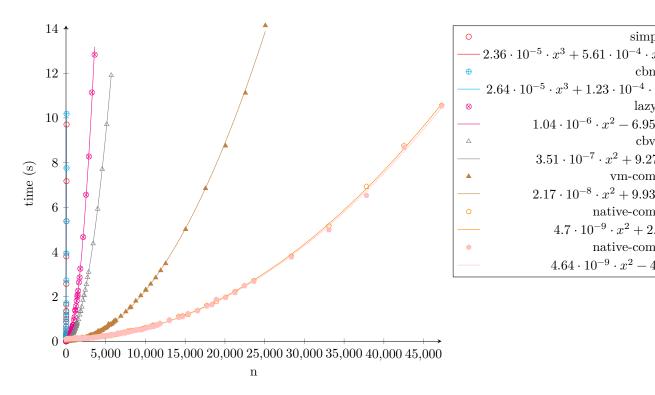


Figure 16: timing-rewrite-plus-0-tree param-1-n 0, param-2-m 1, param-3-input-size 5, param-4-output-size 3, param-5-num-rewrites 1



simp

vm-com

native-com $4.7 \cdot 10^{-9} \cdot x^2 + 2.$

native-com

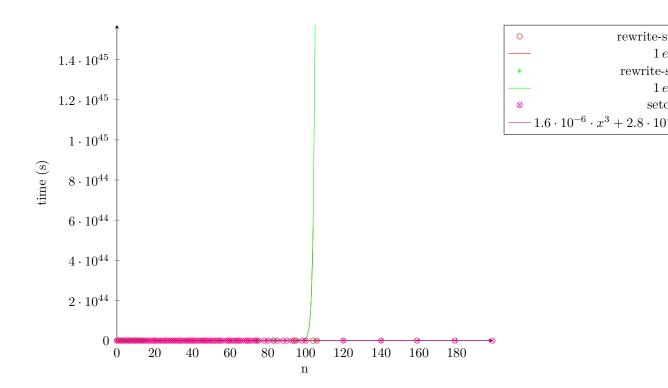
 $1.04 \cdot 10^{-6} \cdot x^2 - 6.95$

 $3.51 \cdot 10^{-7} \cdot x^2 + 9.27$

 $2.17 \cdot 10^{-8} \cdot x^2 + 9.93$

 $4.64 \cdot 10^{-9} \cdot x^2 - 4$

Figure 17: timing-sieve-of-eratosthenes



rewrite-s

rewrite-s

Figure 18: timing-rewrite-under-lets-plus-0 $\,$

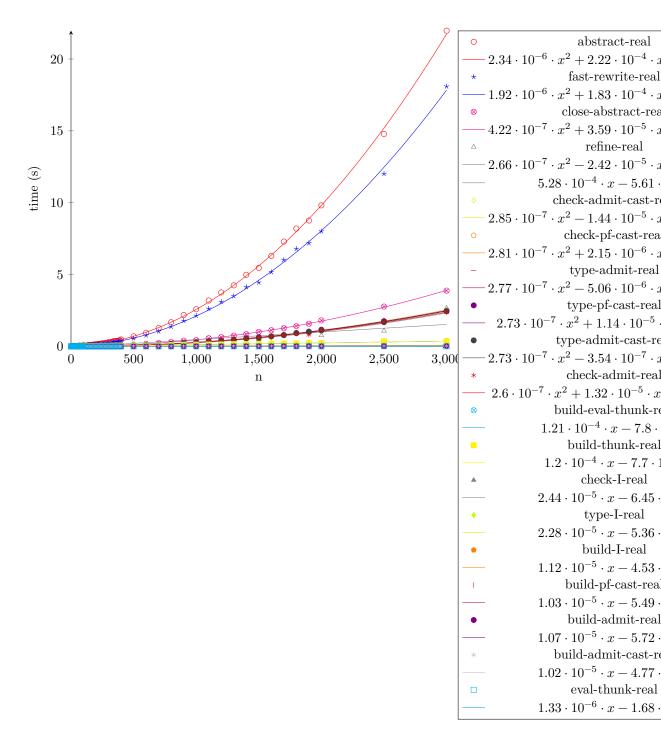


Figure 19: timing-rewrite-repeated-app-fast-rewrite-ltac2