

Figure 1: timing-pattern

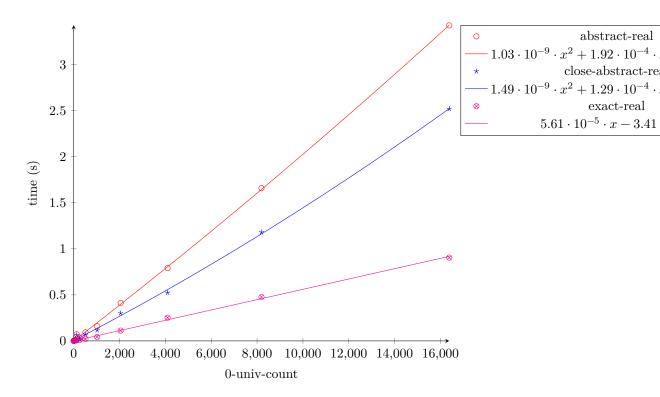


Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$

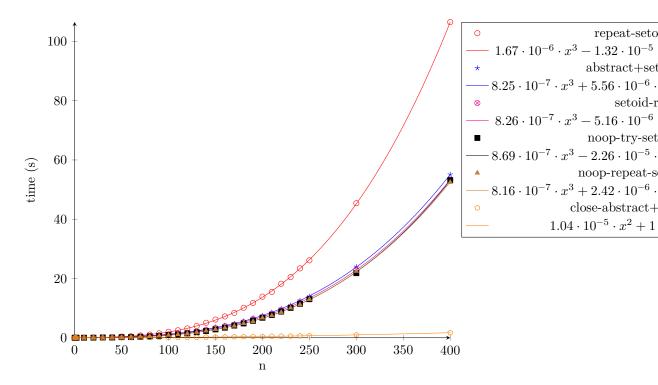
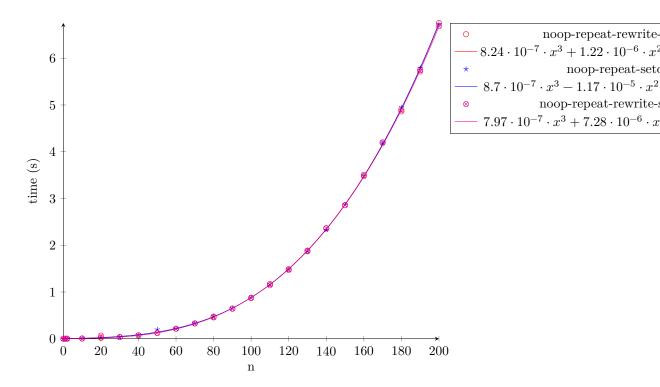
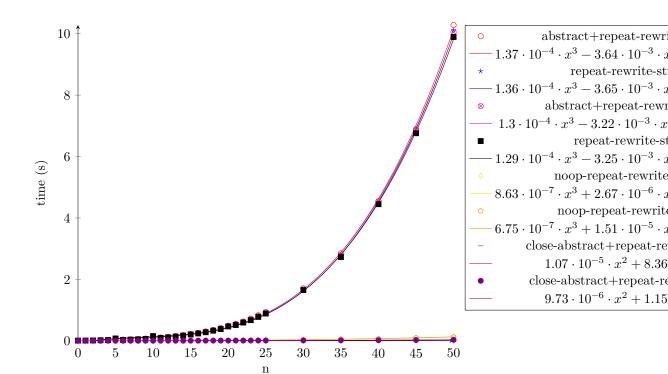


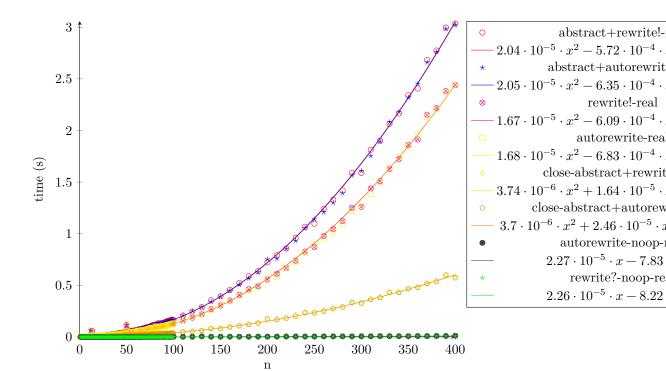
Figure 3: timing-repeat-setoid-rewrite-under-binders



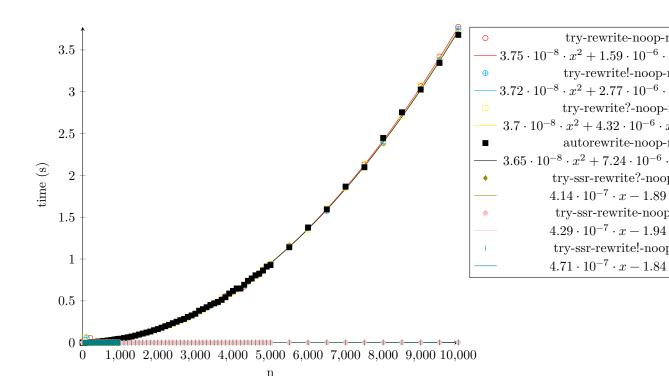
 $Figure\ 4:\ timing-repeat-setoid-rewrite-under-binders-noop$



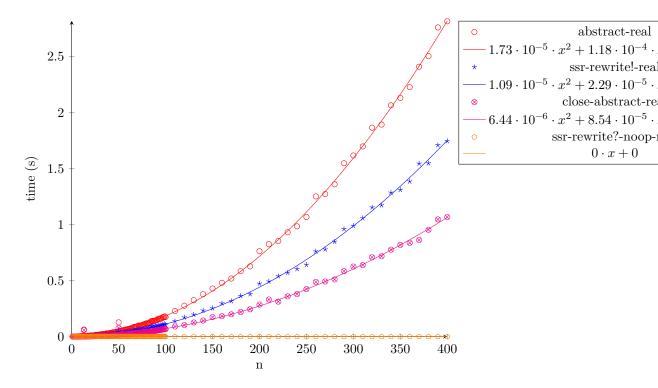
 $Figure\ 5:\ timing-rewrite-strat-under-binders$



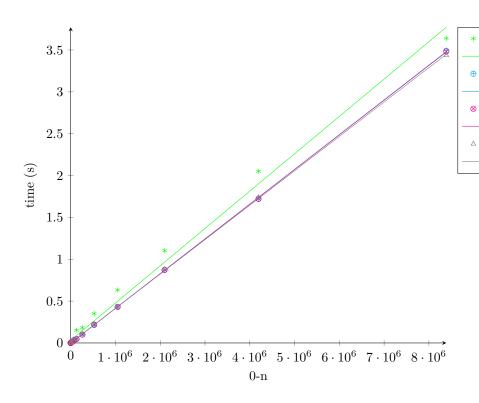
 $Figure \ 6: \ timing-rewrite-repeated-app-autorewrite \\$



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



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



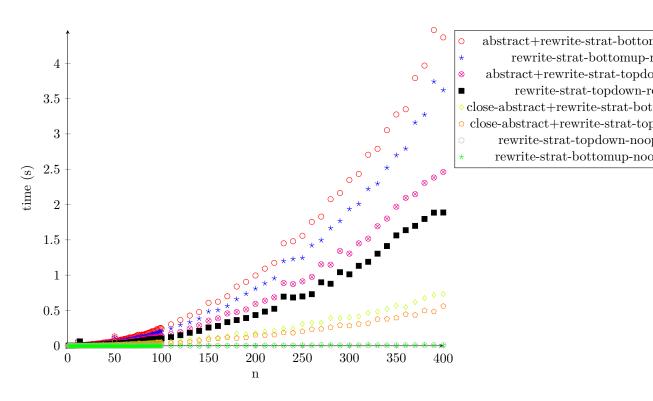
try-ssr-rewrite!-cold-noop-rea

 $\begin{array}{l} 4.46 \cdot 10^{-7} \cdot x + 3.07 \cdot 10^{-2} \\ \text{try-ssr-rewrite?-noop-real} \\ 4.15 \cdot 10^{-7} \cdot x - 1.58 \cdot 10^{-3} \end{array}$

try-ssr-rewrite-noop-real $4.14\cdot 10^{-7}\cdot x - 1.26\cdot 10^{-3}$

try-ssr-rewrite!-noop-real $4.11 \cdot 10^{-7} \cdot x + 1.67 \cdot 10^{-3}$

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

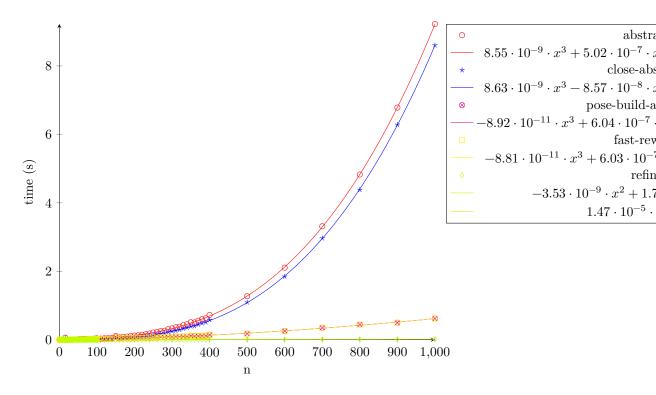


abstract + rewrite-strat-bottonrewrite-strat-bottomup-r

abstract + rewrite - strat - topdorewrite-strat-topdown-re

rewrite-strat-topdown-noop rewrite-strat-bottomup-noo

 $Figure\ 10:\ timing-rewrite-repeated-app-rewrite-strat$



 $Figure~11:~timing\mbox{-rewrite-repeated-app-fast-rewrite}$

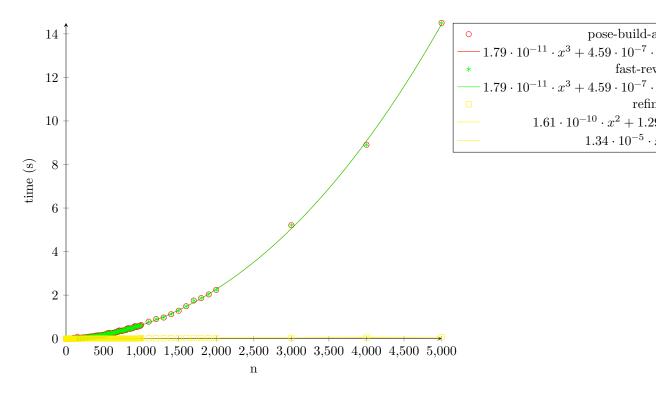


Figure 12: timing-rewrite-repeated-app-fast-rewrite-no-abstract

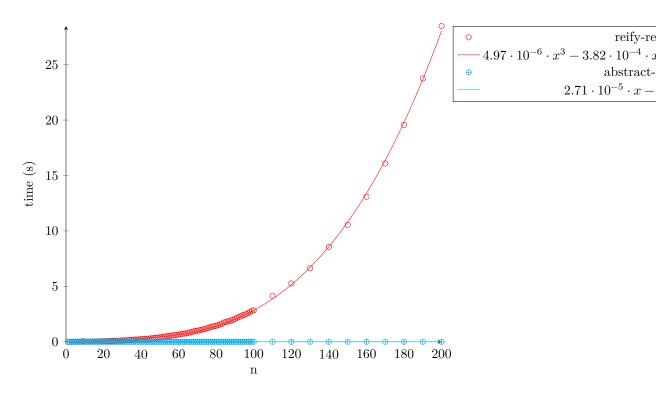
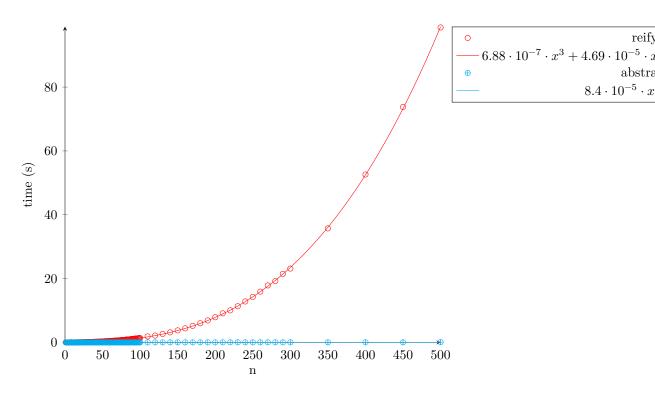


Figure 13: timing-typeclass-reification-let-in-HOAS



 ${\bf Figure~14:~timing-type class-reification-let-in-PHOAS}$

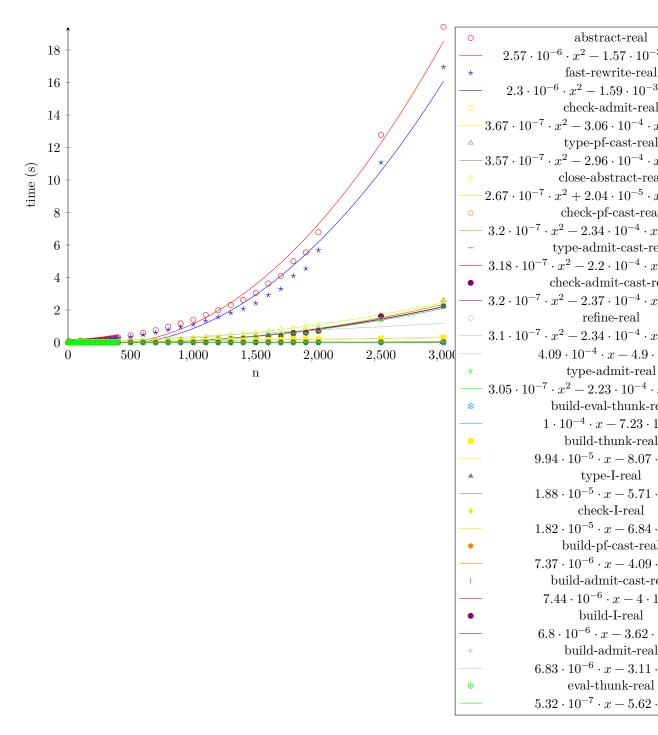


Figure 15: timing-rewrite-repeated-app-fast-rewrite-ltac2