

Figure 1: timing-pattern

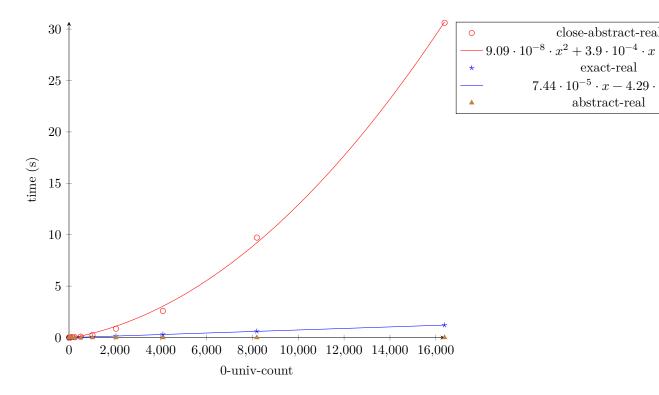
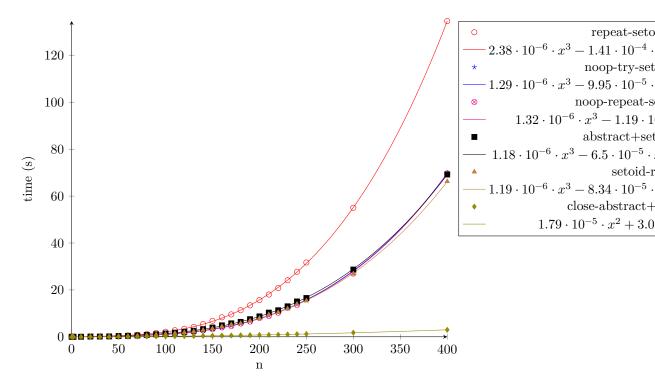


Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$



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

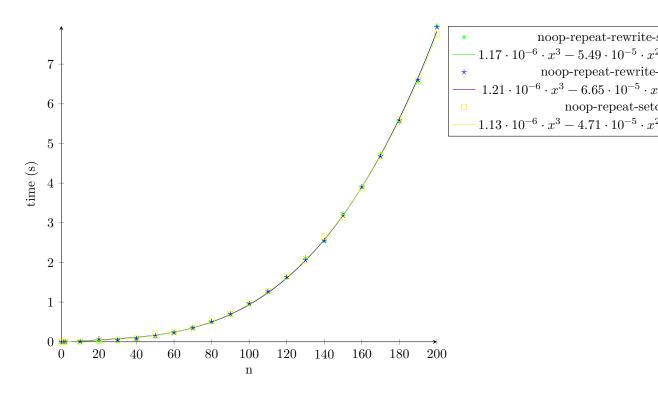


Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

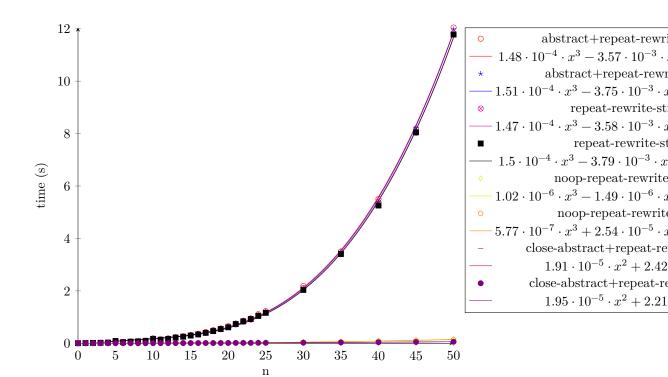
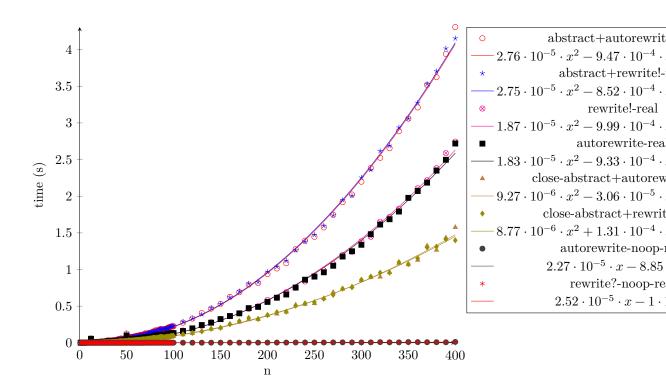


Figure 5: timing-rewrite-strat-under-binders



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

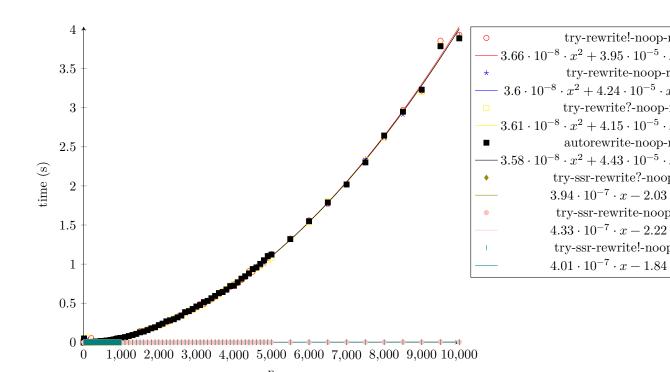
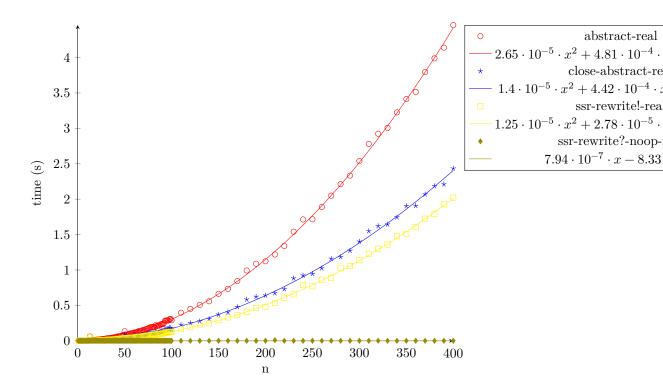
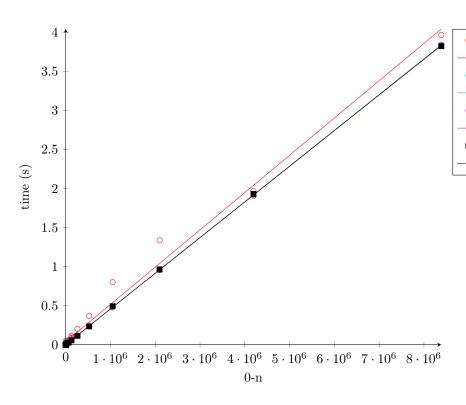


Figure 7: timing-rewrite-repeated-app-autorewrite-noop



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



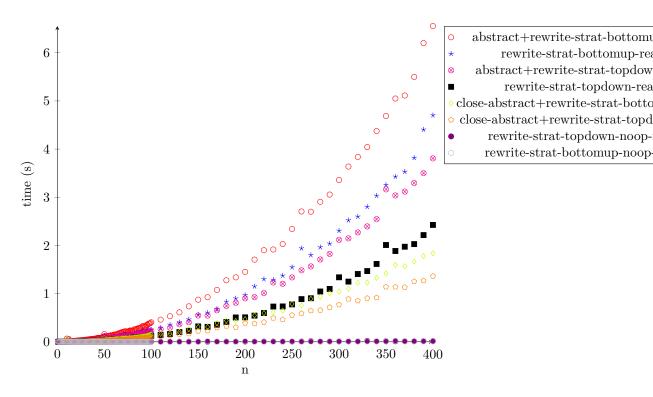
try-ssr-rewrite!-cold-noop-rea $4.77 \cdot 10^{-7} \cdot x + 3.86 \cdot 10^{-2}$

try-ssr-rewrite-noop-real $4.57 \cdot 10^{-7} \cdot x + 4.25 \cdot 10^{-4}$

try-ssr-rewrite!-noop-real $4.56 \cdot 10^{-7} \cdot x + 1.55 \cdot 10^{-3}$ try-ssr-rewrite?-noop-real

 $4.56\cdot 10^{-7}\cdot x + 9.8\cdot 10^{-4}$

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



 $abstract + rewrite - strat - bottom \\ u$

rewrite-strat-bottomup-rea abstract + rewrite - strat - topdowrewrite-strat-topdown-rea

rewrite-strat-topdown-noop-

rewrite-strat-bottomup-noop-

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

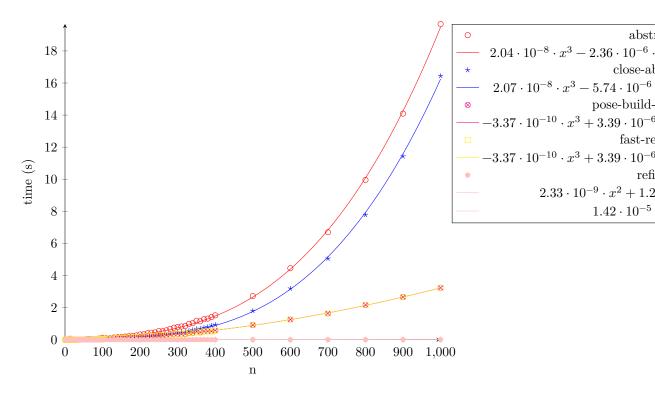
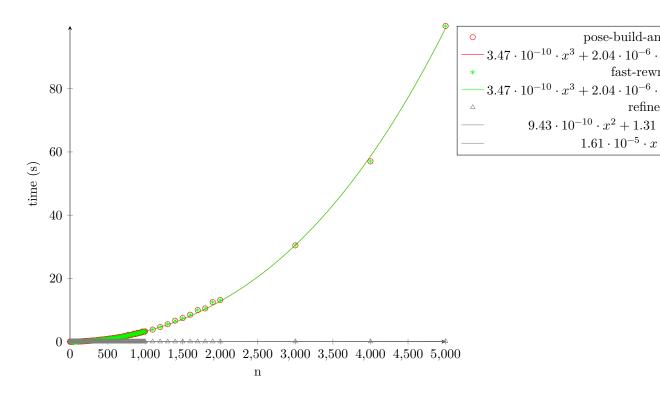
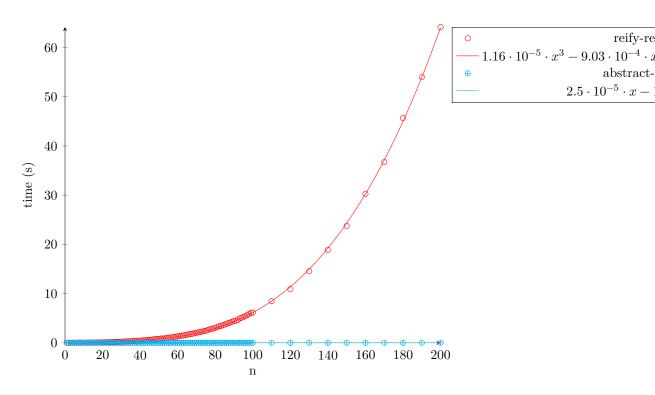


Figure 11: timing-rewrite-repeated-app-fast-rewrite



 $Figure~12:~timing\mbox{-rewrite-repeated-app-fast-rewrite-no-abstract}$



 ${\bf Figure~13:~timing-type class-reification-let-in-HOAS}$

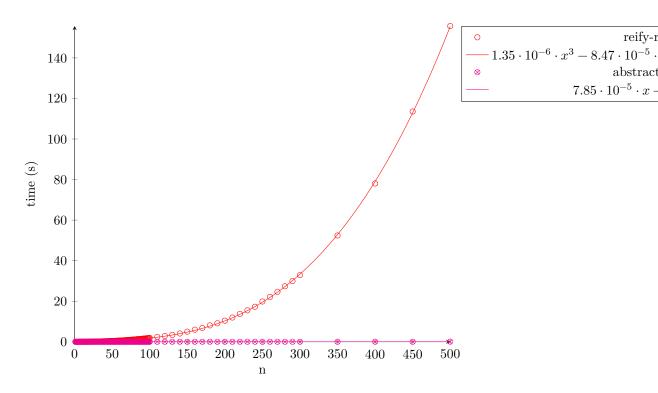


Figure 14: timing-typeclass-reification-let-in-PHOAS