

Figure 1: timing-pattern

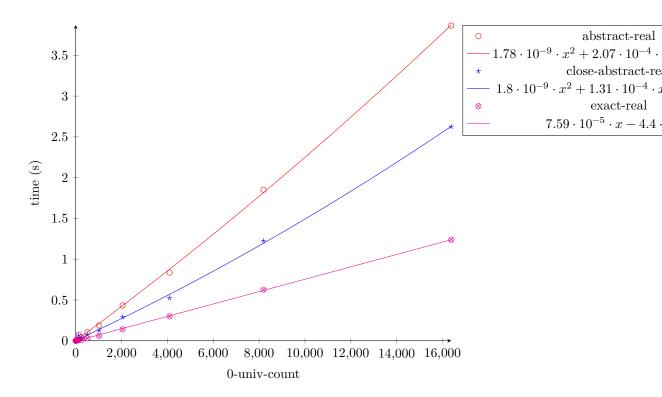
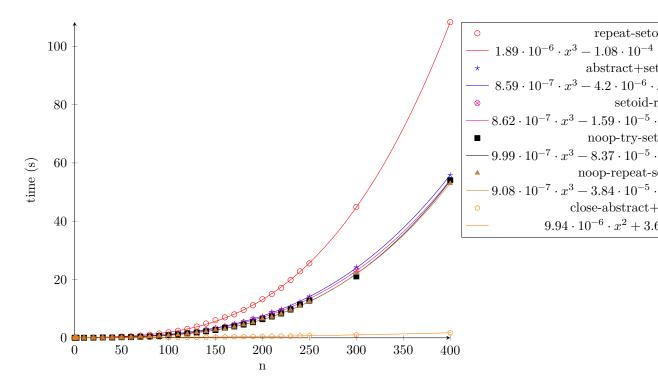


Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$



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

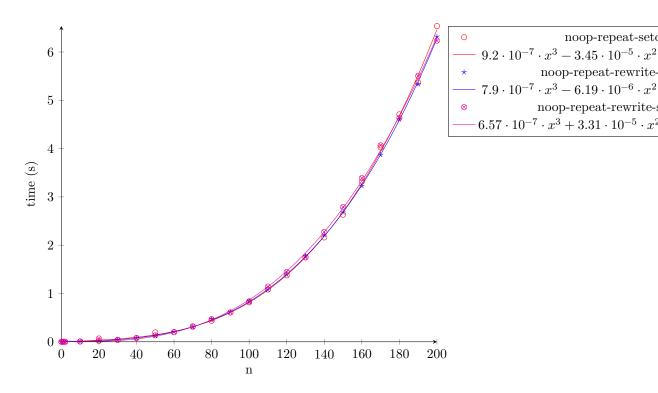
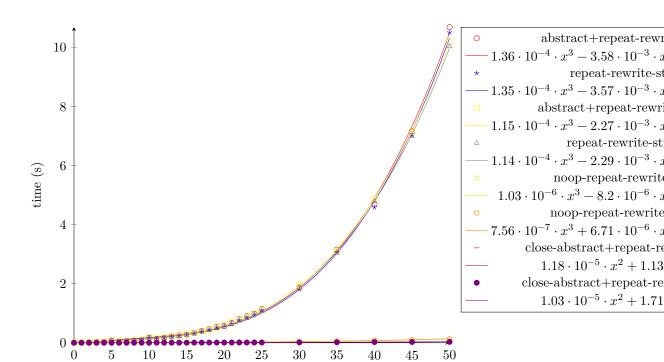
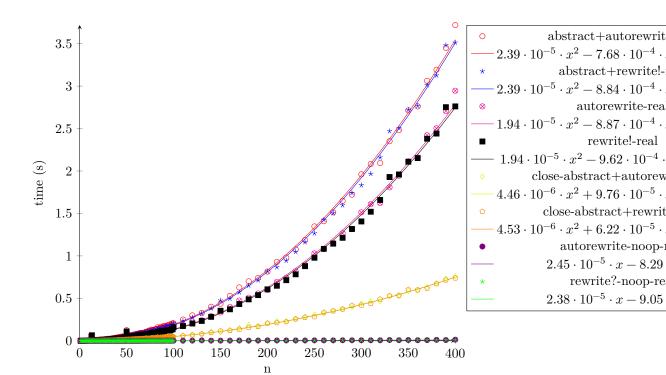


Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

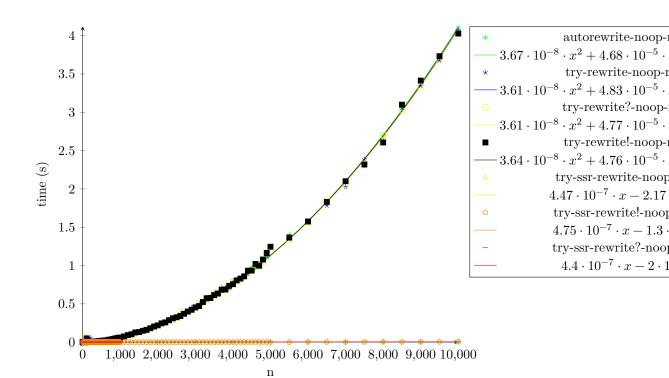


 $Figure\ 5:\ timing-rewrite-strat-under-binders$

n



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



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

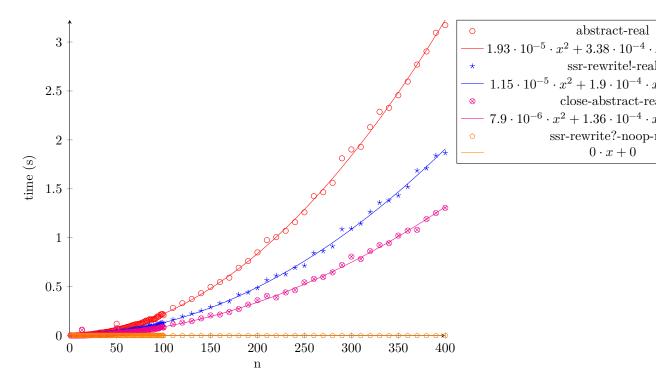
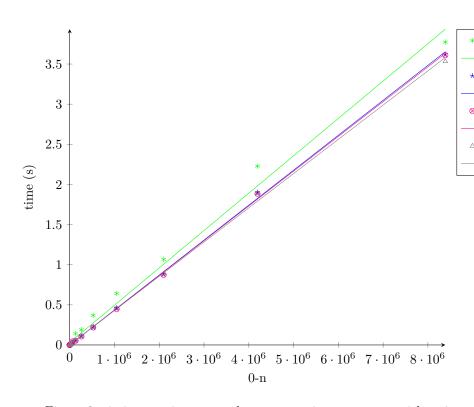


Figure 8: timing-rewrite-repeated-app-ssrrewrite



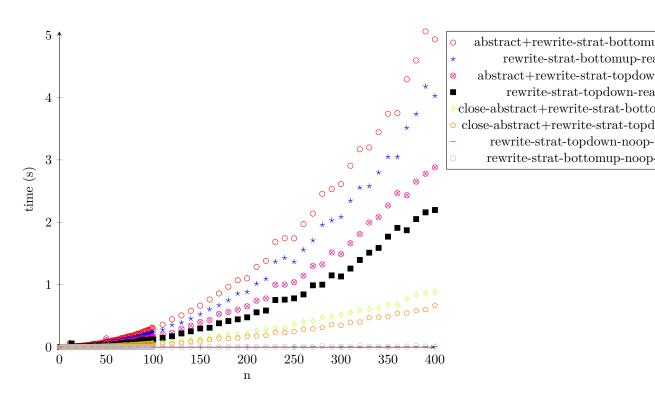
try-ssr-rewrite!-cold-noop-rea $4.65\cdot 10^{-7}\cdot x + 2.94\cdot 10^{-2}$

try-ssr-rewrite?-noop-real $4.35\cdot 10^{-7}\cdot x - 9.74\cdot 10^{-5}$

try-ssr-rewrite!-noop-real $4.33\cdot 10^{-7}\cdot x - 3.1\cdot 10^{-4}$

try-ssr-rewrite-noop-real $4.27\cdot 10^{-7}\cdot x + 2.18\cdot 10^{-3}$

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



rewrite-strat-bottomup-real

rewrite-strat-topdown-rea

rewrite-strat-topdown-nooprewrite-strat-bottomup-noop-

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

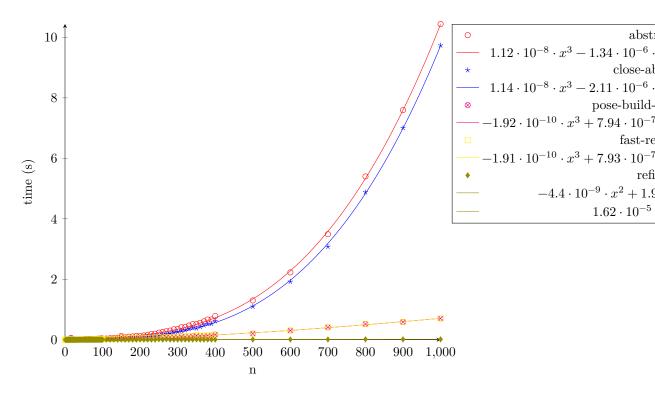
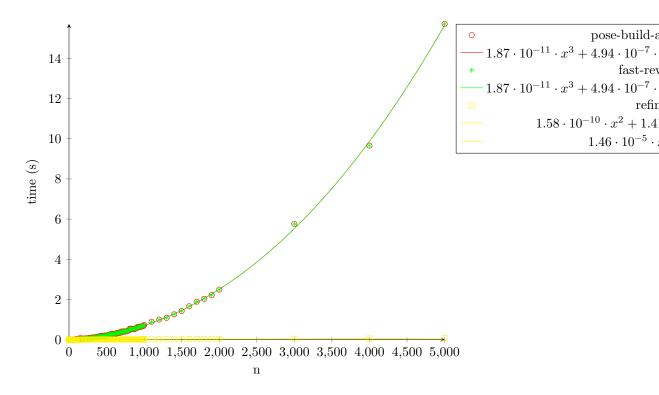


Figure 11: timing-rewrite-repeated-app-fast-rewrite



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

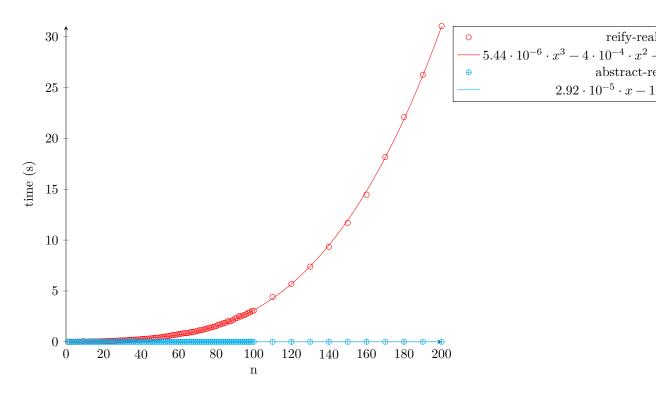
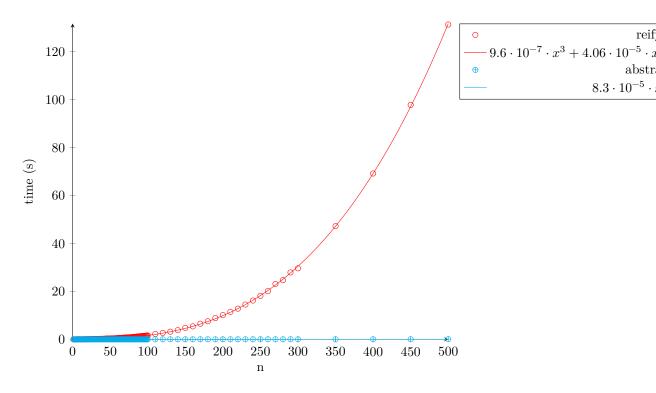


Figure 13: timing-typeclass-reification-let-in-HOAS



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

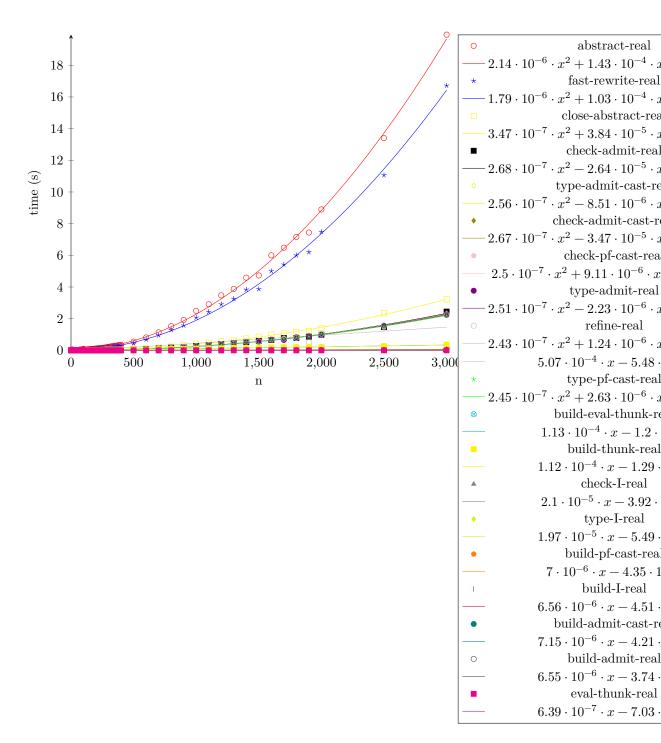


Figure 15: timing-rewrite-repeated-app-fast-rewrite-ltac2