

Figure 1: timing-pattern

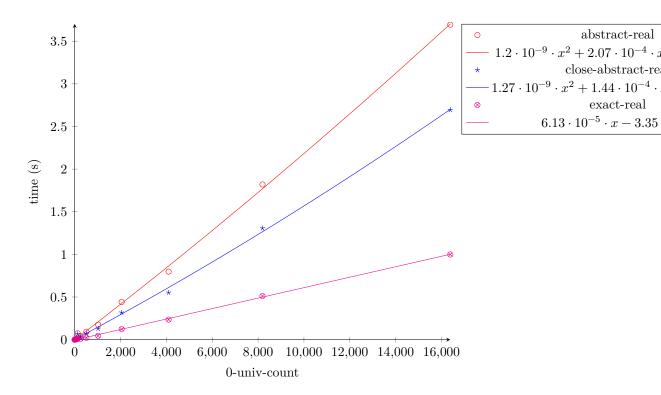


Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$

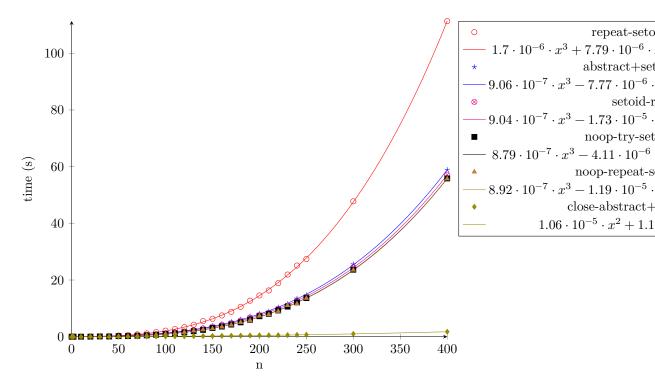
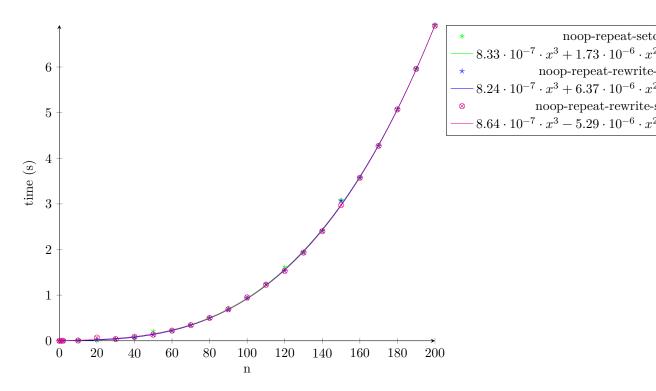
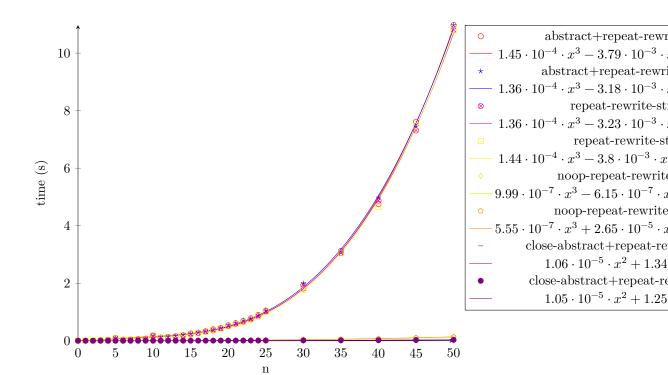


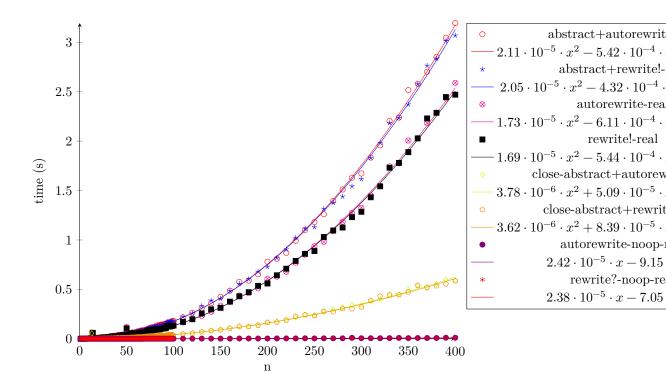
Figure 3: timing-repeat-setoid-rewrite-under-binders



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



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



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

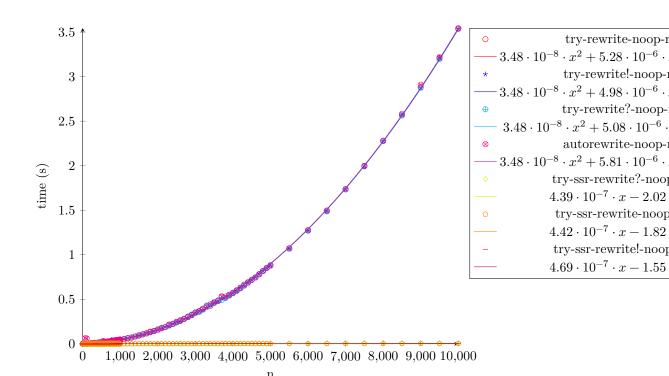
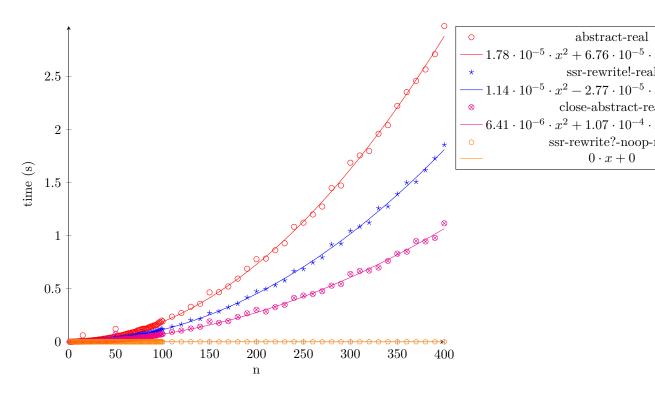
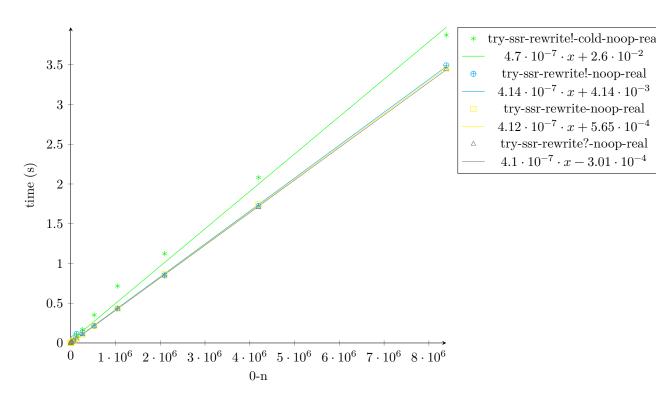


Figure 7: timing-rewrite-repeated-app-autorewrite-noop



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



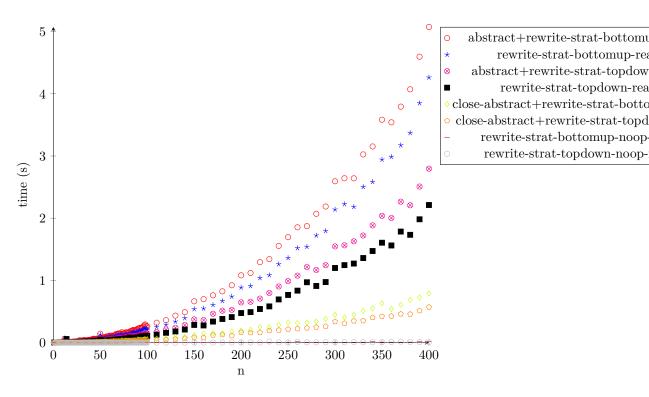
 $4.7 \cdot 10^{-7} \cdot x + 2.6 \cdot 10^{-2}$

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

try-ssr-rewrite-noop-real $4.12 \cdot 10^{-7} \cdot x + 5.65 \cdot 10^{-4}$ try-ssr-rewrite?-noop-real

 $4.1\cdot 10^{-7}\cdot x - 3.01\cdot 10^{-4}$

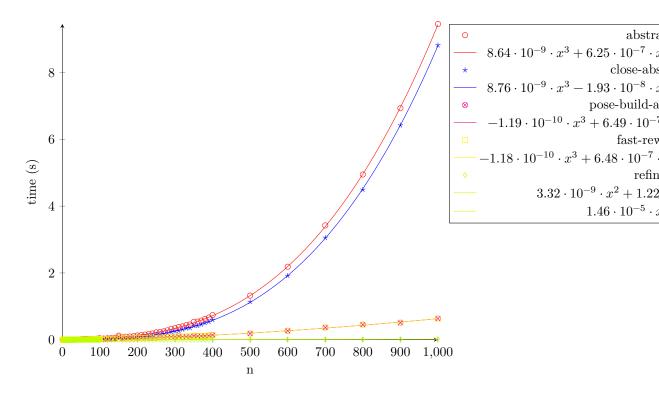
Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn $\,1\,$



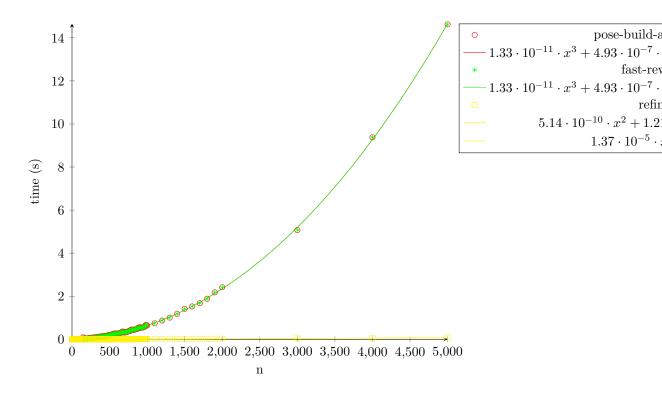
abstract+rewrite-strat-bottomu rewrite-strat-bottomup-realabstract + rewrite - strat - topdowrewrite-strat-topdown-rea

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

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



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



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

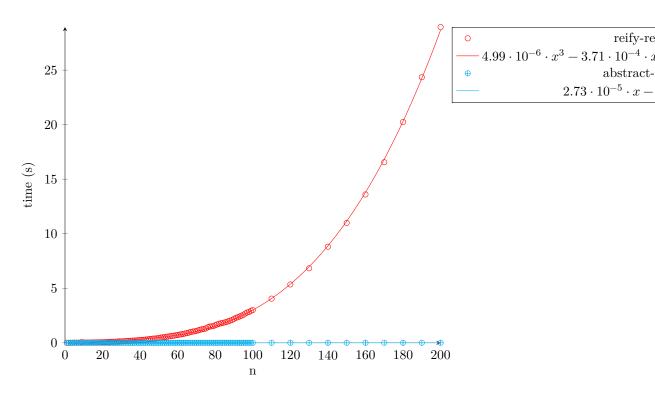
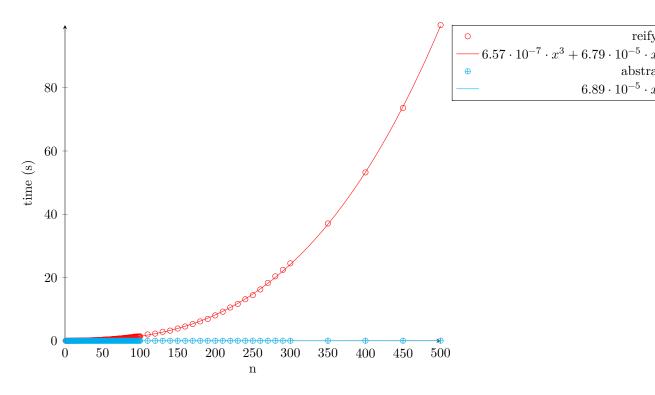
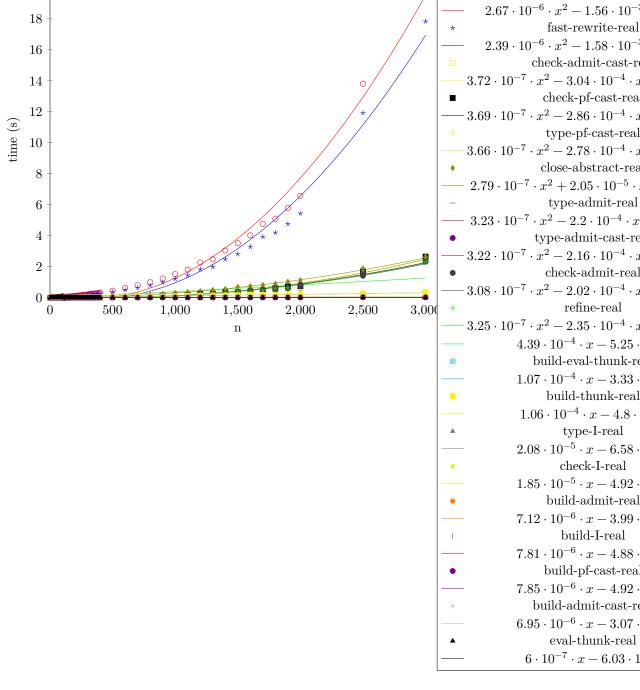


Figure 13: timing-typeclass-reification-let-in-HOAS



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



abstract-real

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

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