

Figure 1: timing-pattern

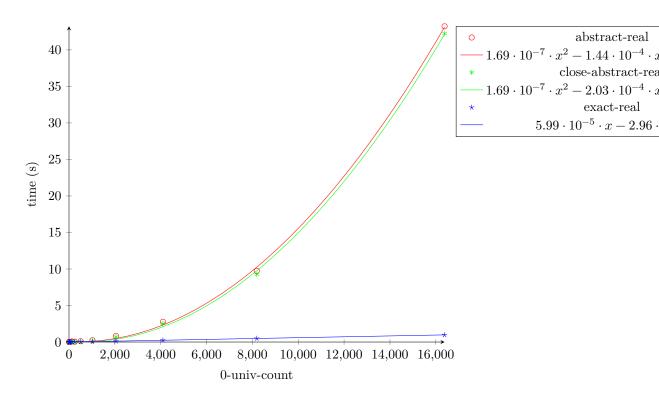
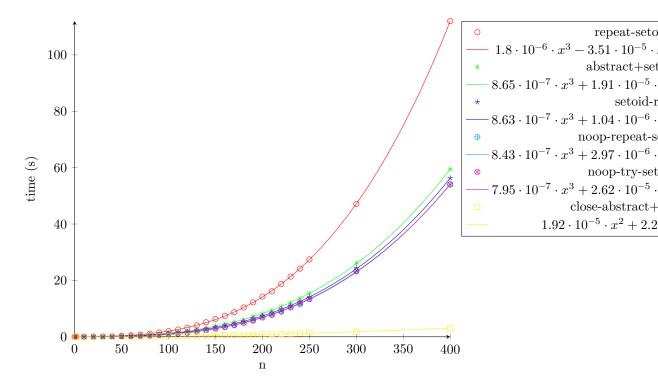
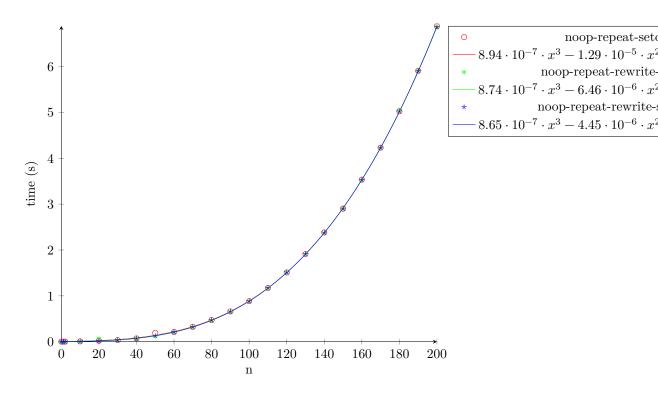


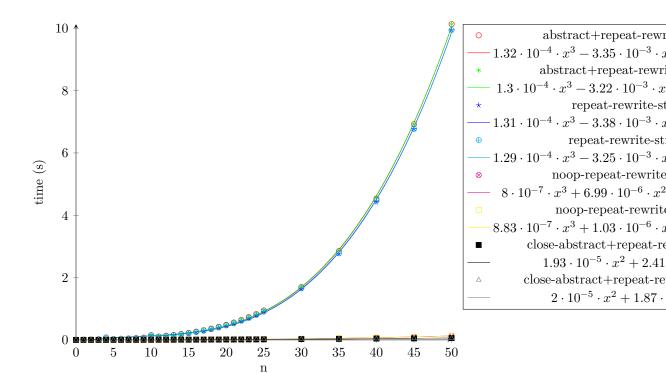
Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$



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



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



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

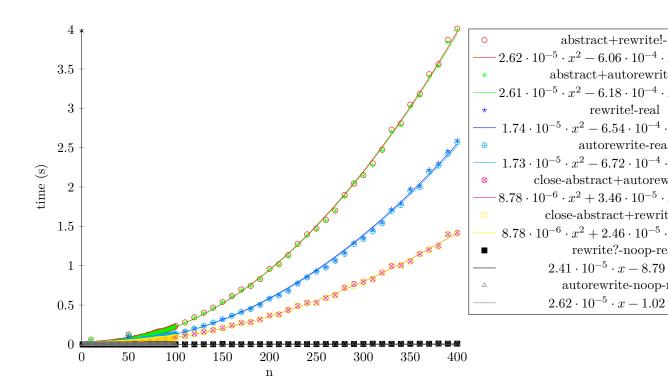
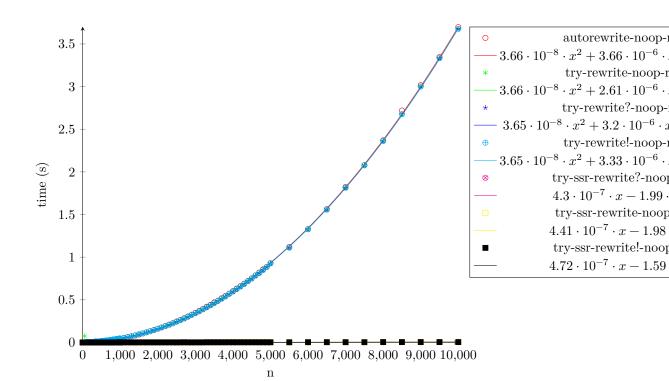
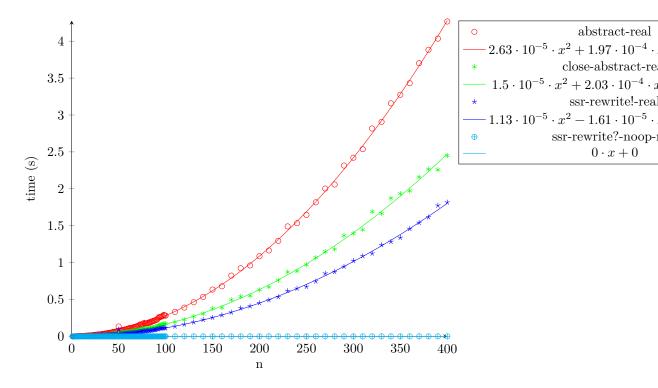


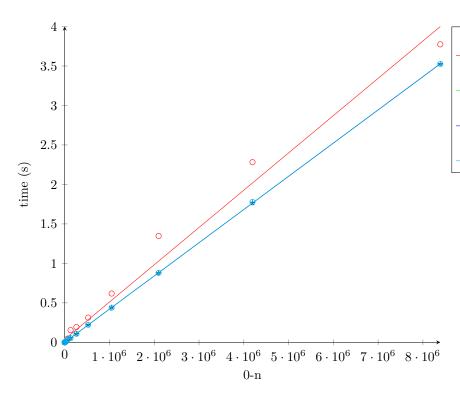
Figure 6: timing-rewrite-repeated-app-autorewrite



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



 ${\bf Figure~8:~timing\text{-}rewrite\text{-}repeated\text{-}app\text{-}ssrrewrite}$



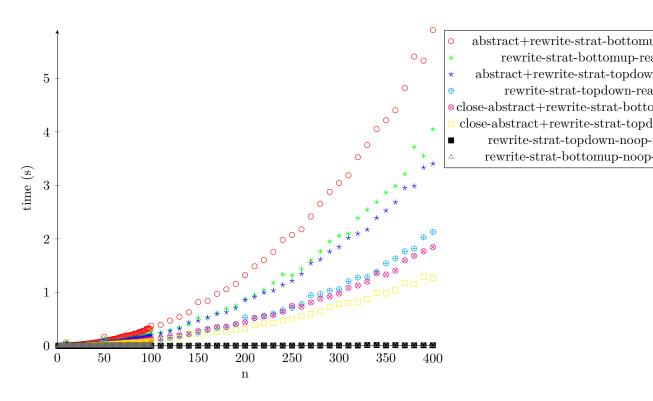
try-ssr-rewrite!-cold-noop-rea $4.72 \cdot 10^{-7} \cdot x + 3.77 \cdot 10^{-2}$

try-ssr-rewrite?-noop-real $4.21\cdot 10^{-7}\cdot x - 8.02\cdot 10^{-4}$

 $\begin{array}{l} \text{try-ssr-rewrite!-noop-real} \\ 4.21 \cdot 10^{-7} \cdot x - 9.49 \cdot 10^{-5} \\ \text{try-ssr-rewrite-noop-real} \end{array}$

 $4.21\cdot 10^{-7}\cdot x + 5.02\cdot 10^{-4}$

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

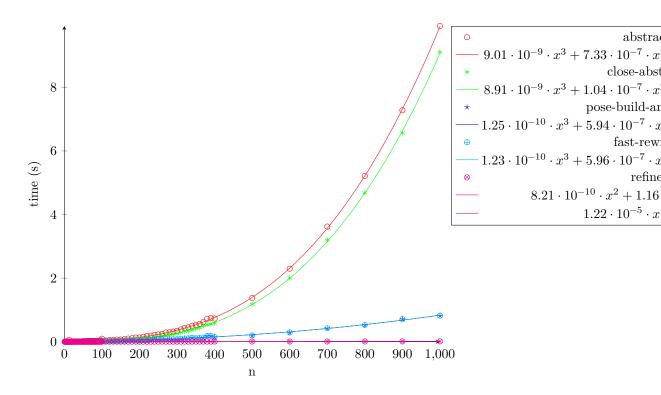


rewrite-strat-bottomup-rea abstract + rewrite - strat - topdow

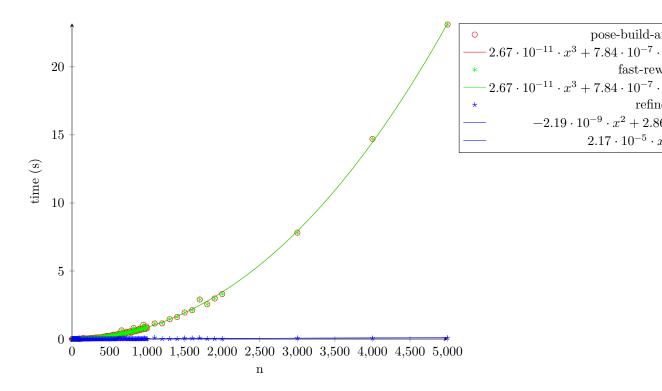
rewrite-strat-topdown-rea

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

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



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



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

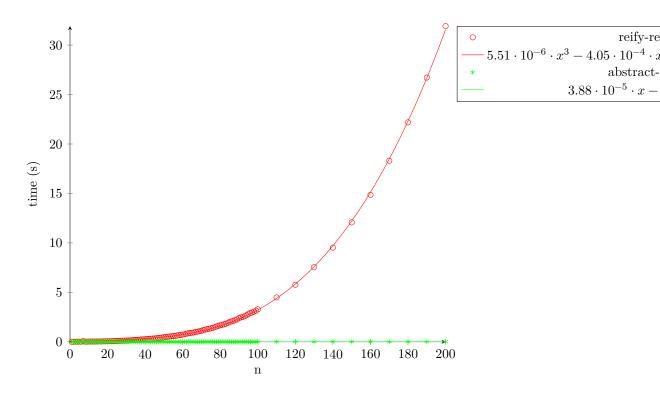


Figure 13: timing-typeclass-reification-let-in-HOAS

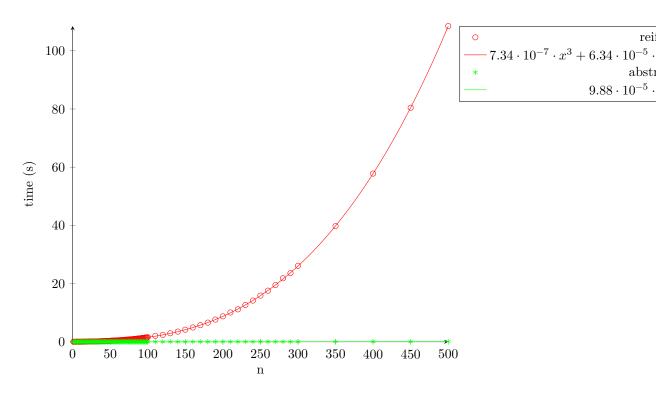


Figure 14: timing-typeclass-reification-let-in-PHOAS

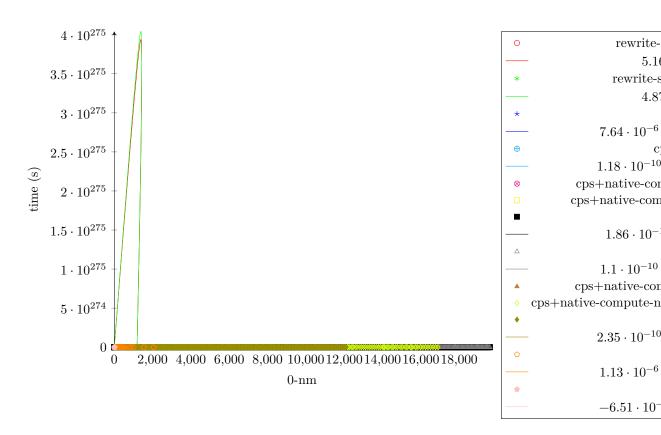


Figure 15: timing-rewrite-lift-lets-map param-1-n 1, param-2-m 1

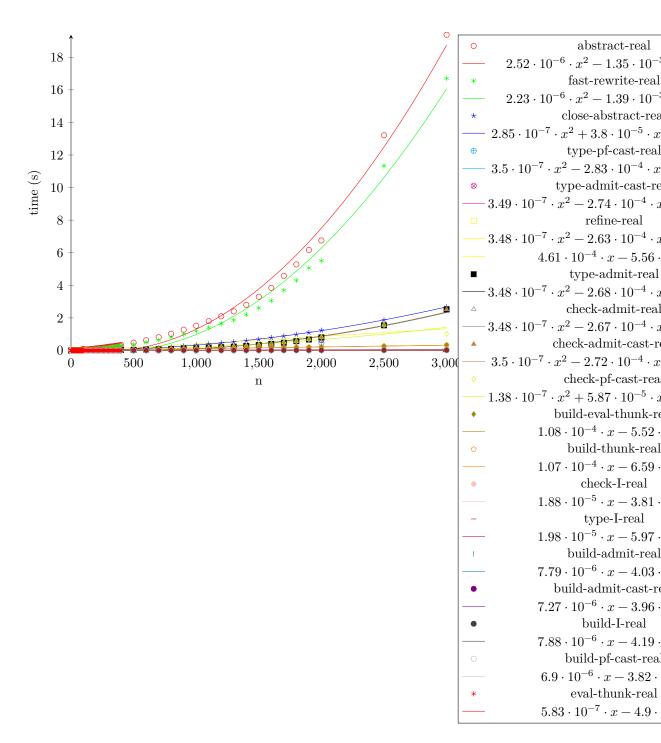


Figure 16: timing-rewrite-repeated-app-fast-rewrite-ltac2