

Figure 1: timing-pattern

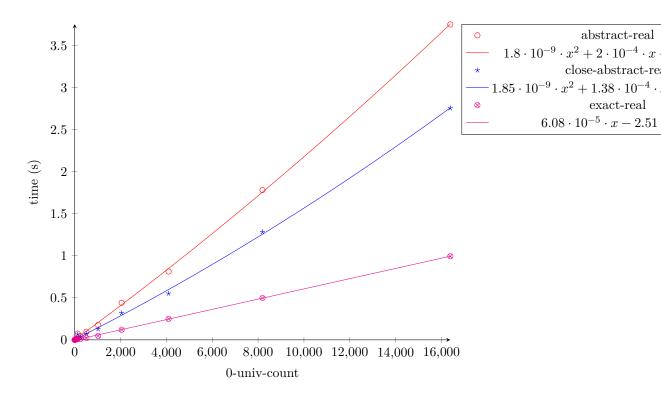


Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$

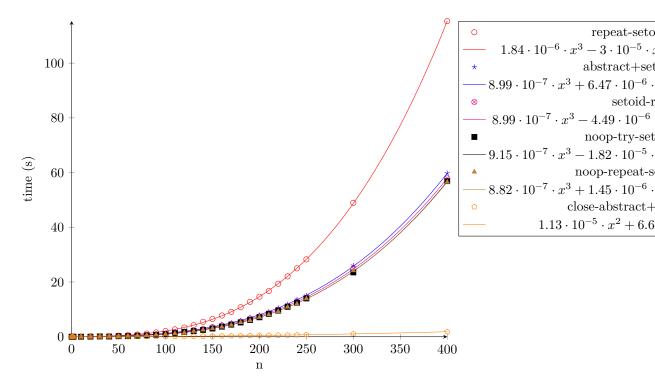


Figure 3: timing-repeat-setoid-rewrite-under-binders

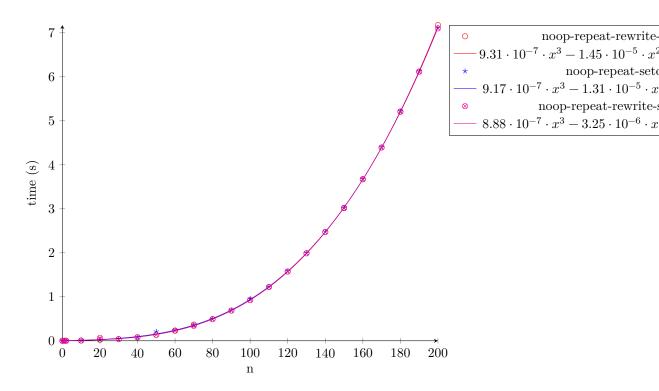
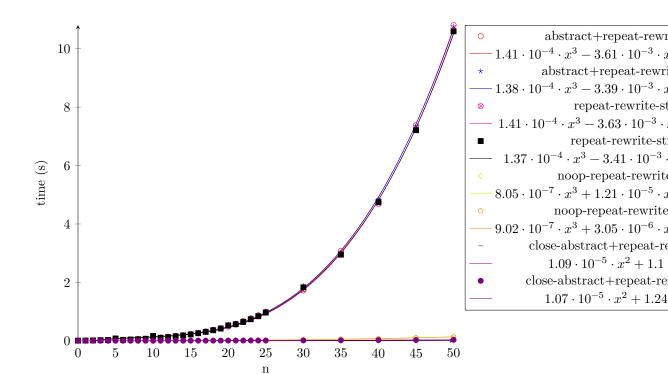
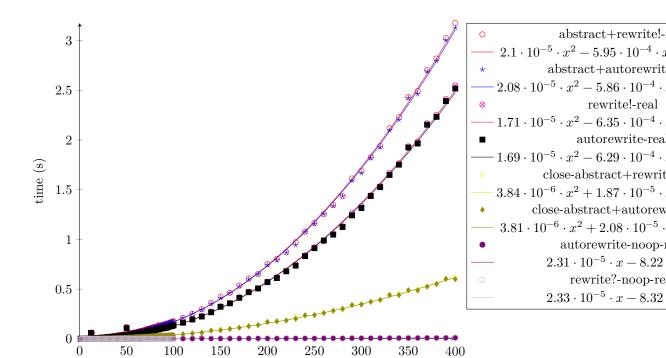


Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

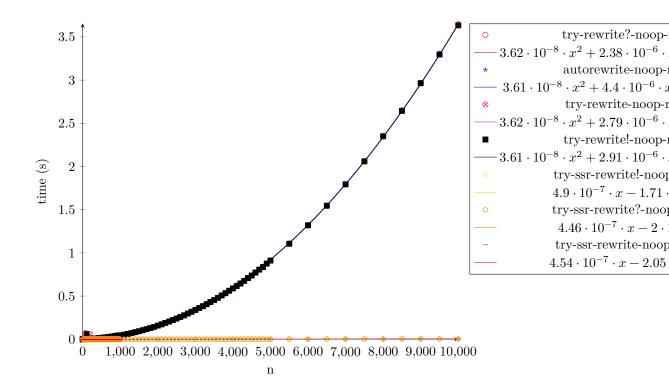


 $Figure\ 5:\ timing-rewrite-strat-under-binders$

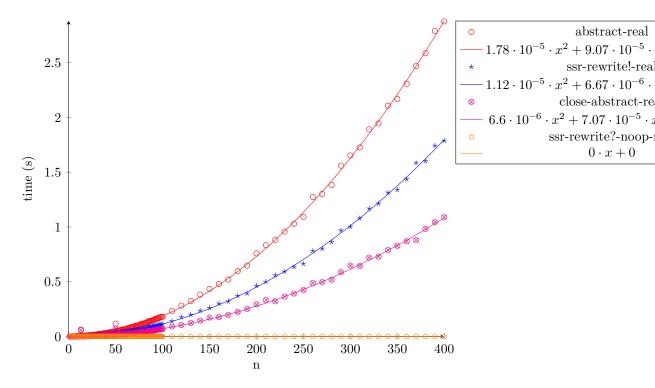


 $Figure \ 6: \ timing-rewrite-repeated-app-autorewrite \\$

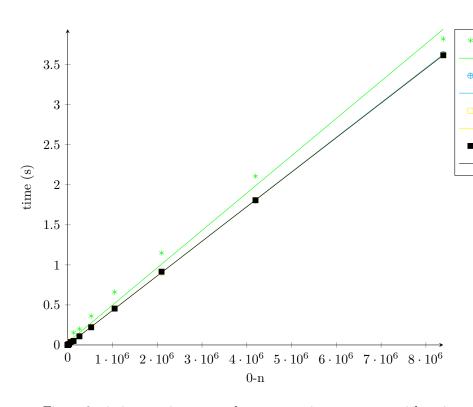
n



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



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



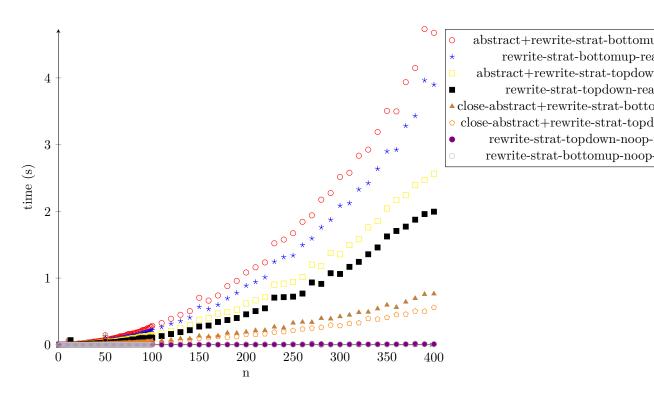
try-ssr-rewrite!-cold-noop-rea $4.66 \cdot 10^{-7} \cdot x + 3.09 \cdot 10^{-2}$

try-ssr-rewrite-noop-real $4.33\cdot 10^{-7}\cdot x - 9.93\cdot 10^{-4}$

 $\begin{array}{l} \text{try-ssr-rewrite!-noop-real} \\ 4.32 \cdot 10^{-7} \cdot x + 6.38 \cdot 10^{-4} \\ \text{try-ssr-rewrite?-noop-real} \end{array}$

 $4.31\cdot 10^{-7}\cdot x - 2.87\cdot 10^{-4}$

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



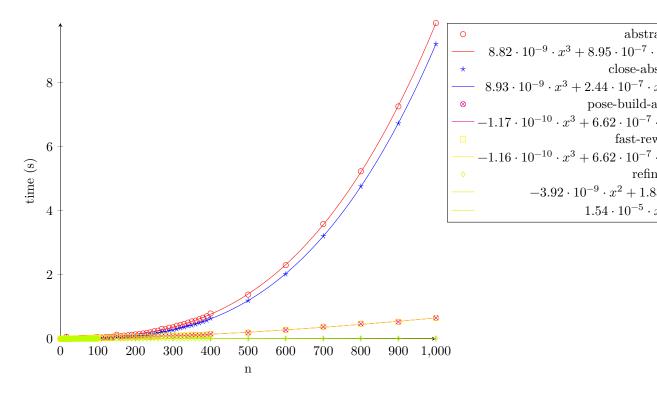
rewrite-strat-bottomup-realabstract + rewrite - strat - topdow

rewrite-strat-topdown-rea

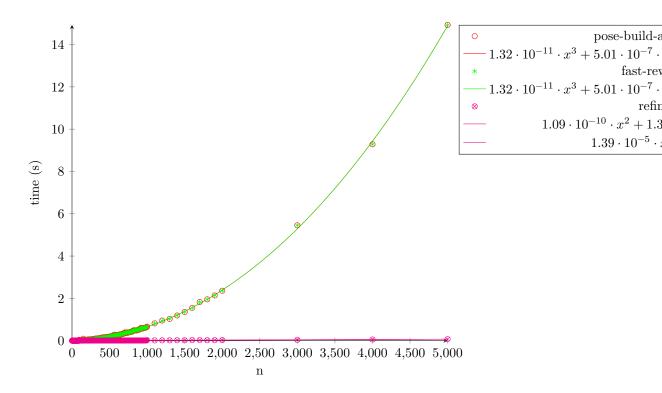
rewrite-strat-topdown-noop-

rewrite-strat-bottomup-noop-

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



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



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

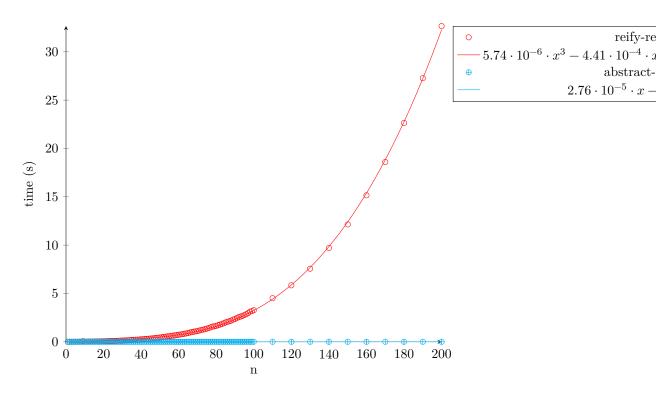
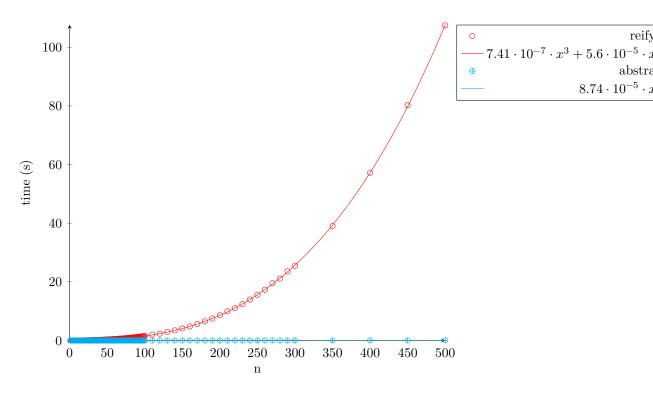
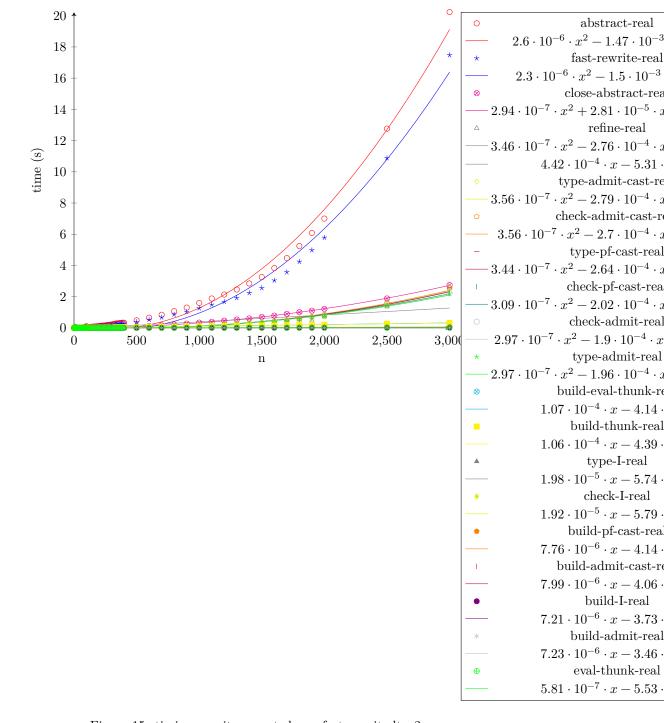


Figure 13: timing-typeclass-reification-let-in-HOAS



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



Figure~15:~timing-rewrite-repeated-app-fast-rewrite-ltac 2