

Figure 1: timing-pattern

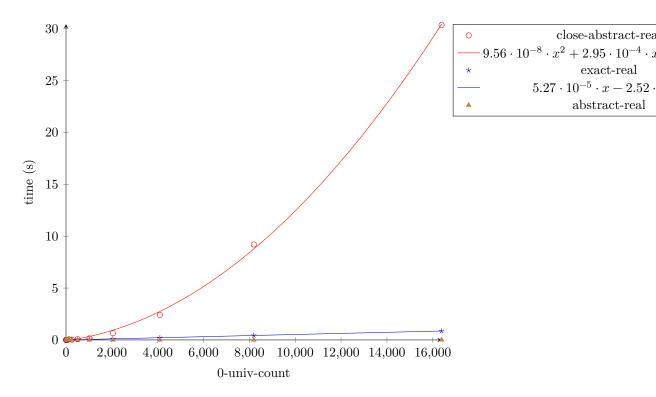
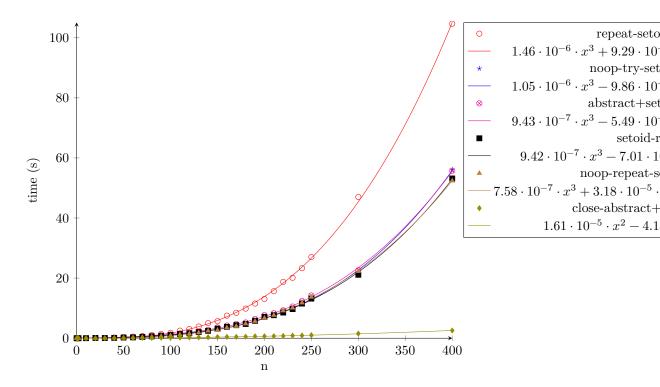


Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$



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

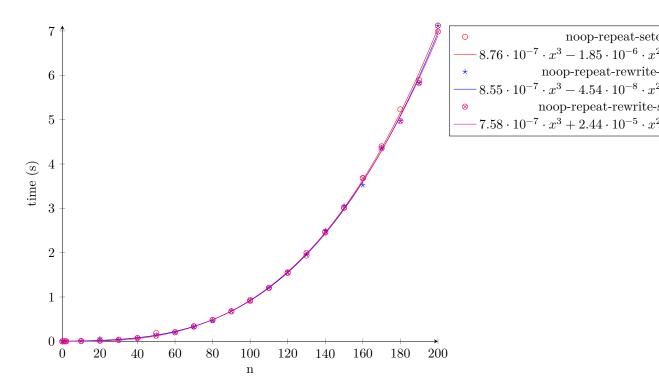


Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

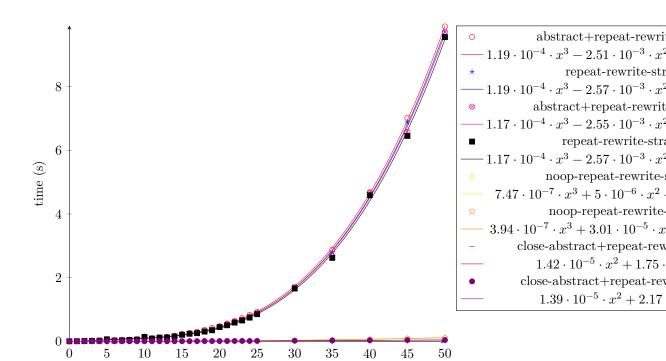
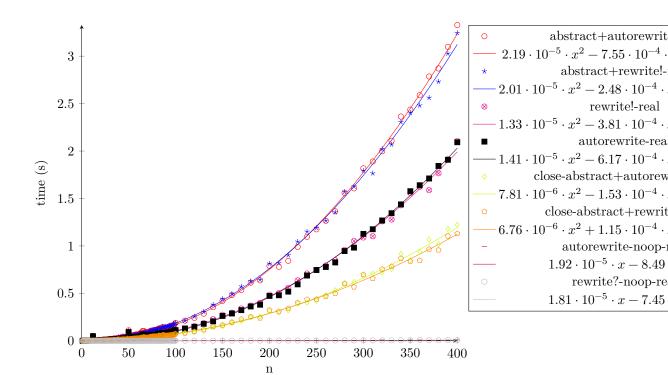
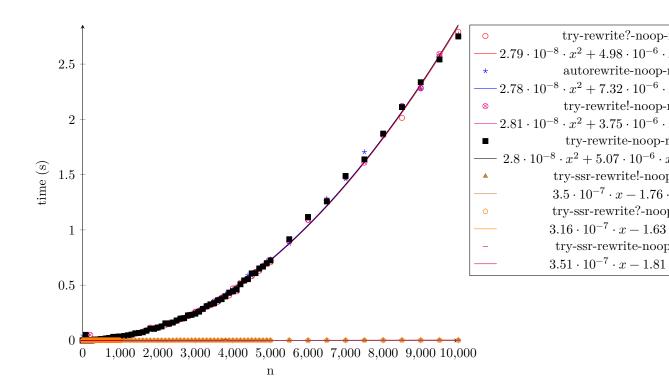


Figure 5: timing-rewrite-strat-under-binders

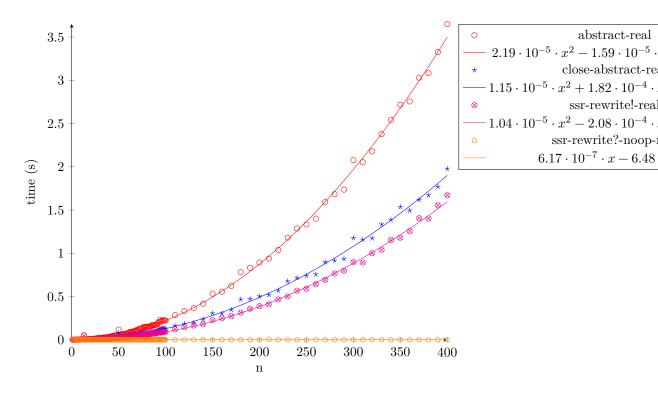
n



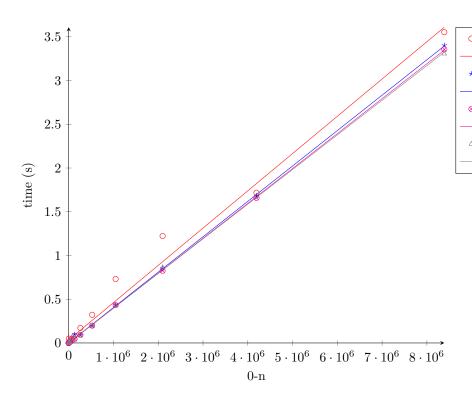
 $Figure \ 6: \ timing-rewrite-repeated-app-autorewrite \\$



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



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

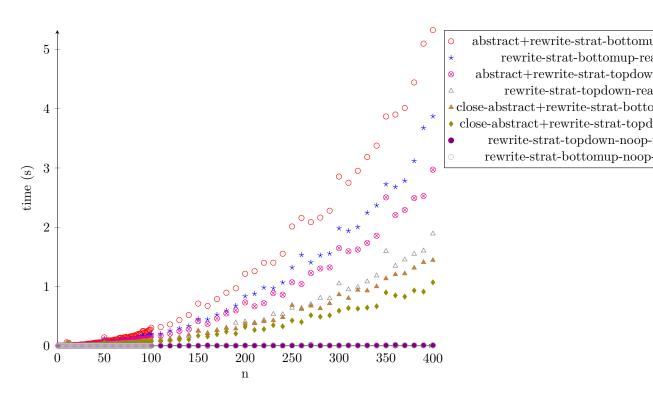


try-ssr-rewrite!-cold-noop-rea $4.26 \cdot 10^{-7} \cdot x + 3.49 \cdot 10^{-2}$ try-ssr-rewrite!-noop-real

 $4.05\cdot 10^{-7}\cdot x + 3.4\cdot 10^{-4}$ try-ssr-rewrite?-noop-real

 $\begin{array}{l} 3.99 \cdot 10^{-7} \cdot x - 1.51 \cdot 10^{-3} \\ \text{try-ssr-rewrite-noop-real} \\ 3.96 \cdot 10^{-7} \cdot x + 2.16 \cdot 10^{-3} \end{array}$

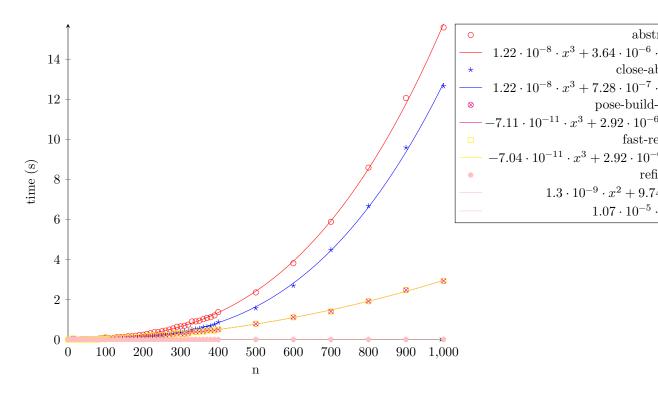
Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn $\ 1$



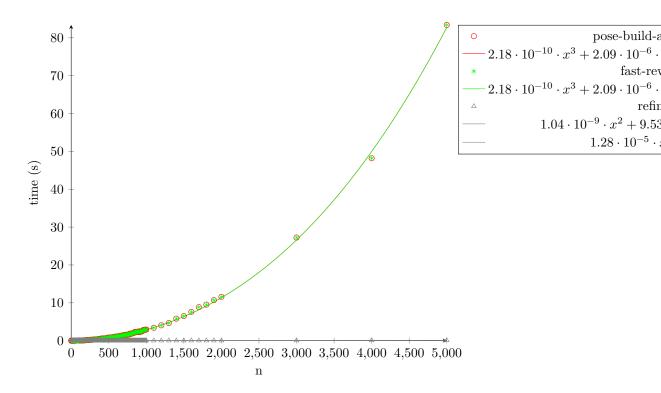
rewrite-strat-bottomup-realabstract + rewrite - strat - topdowrewrite-strat-topdown-rea

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

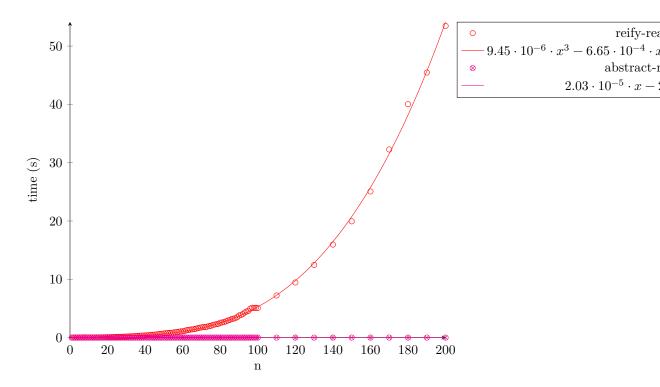
 $Figure~10:~timing\mbox{-rewrite-repeated-app-rewrite-strat}$



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



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



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

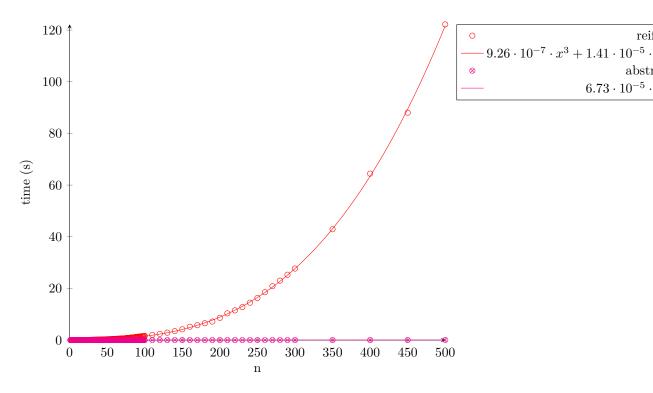


Figure 14: timing-typeclass-reification-let-in-PHOAS