

Figure 1: timing-pattern

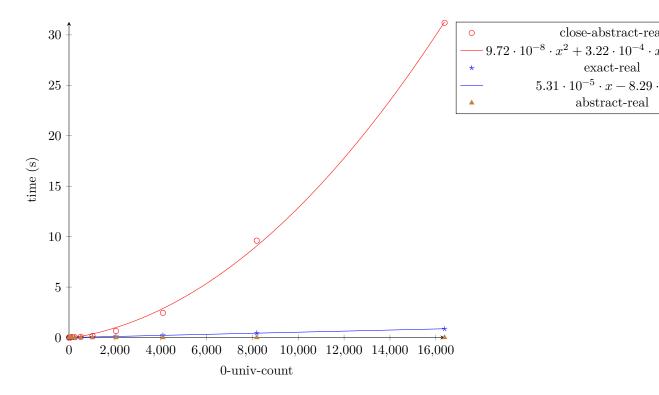


Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$

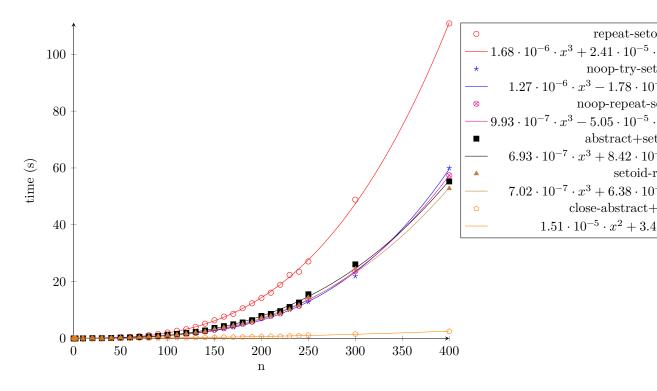
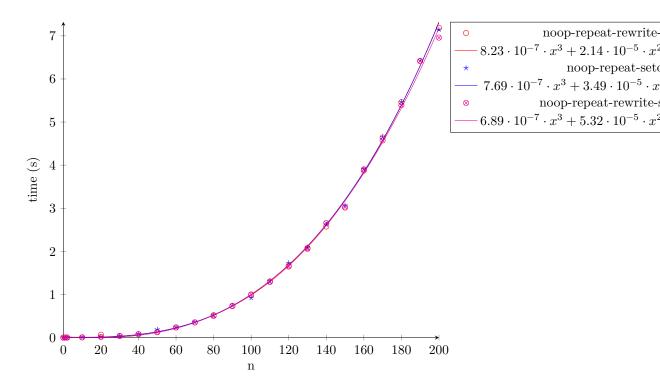
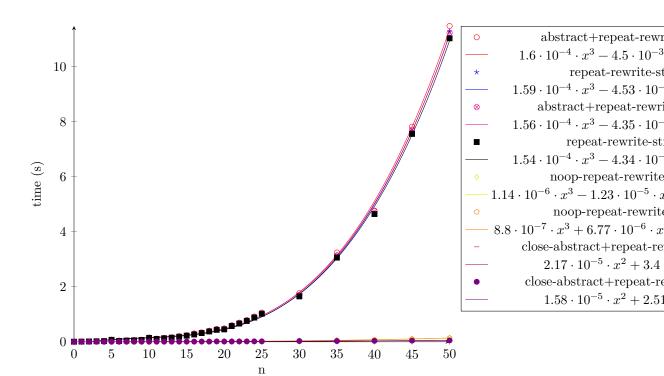


Figure 3: timing-repeat-setoid-rewrite-under-binders



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



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

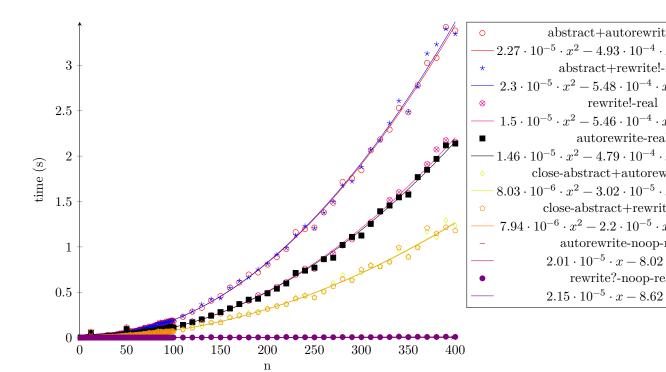
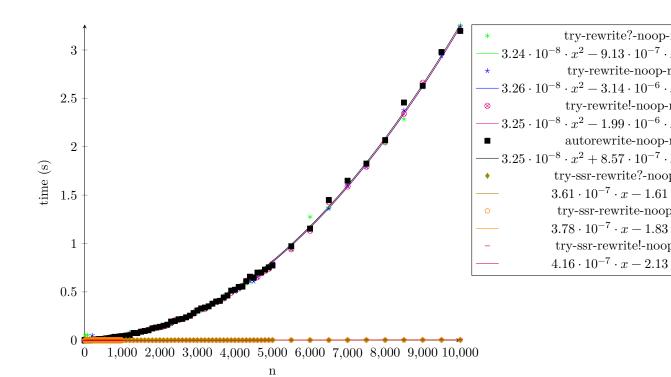


Figure 6: timing-rewrite-repeated-app-autorewrite



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

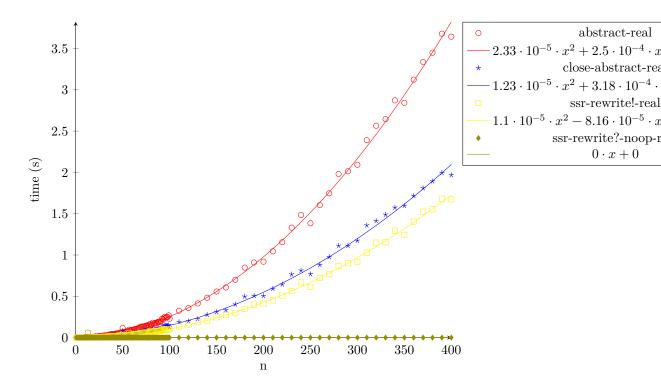
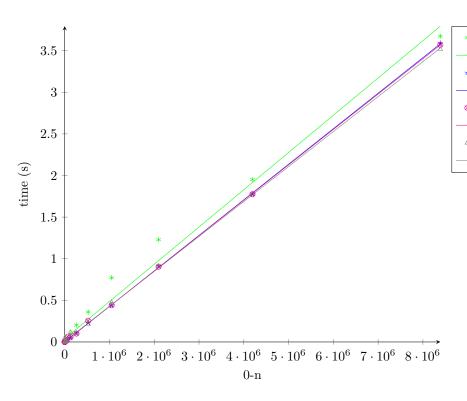


Figure 8: timing-rewrite-repeated-app-ssrrewrite



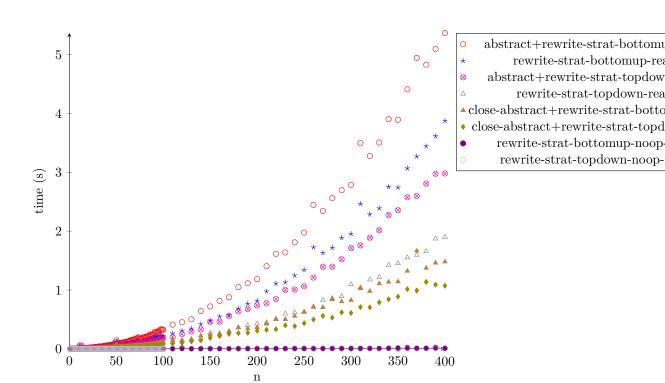
try-ssr-rewrite!-cold-noop-rea

 $\begin{array}{l} 4.48 \cdot 10^{-7} \cdot x + 3.84 \cdot 10^{-2} \\ \text{try-ssr-rewrite?-noop-real} \\ 4.27 \cdot 10^{-7} \cdot x - 5.52 \cdot 10^{-4} \end{array}$

try-ssr-rewrite-noop-real $4.25\cdot 10^{-7}\cdot x + 2.73\cdot 10^{-3}$

try-ssr-rewrite!-noop-real $4.2\cdot 10^{-7}\cdot x + 7.18\cdot 10^{-3}$

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



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

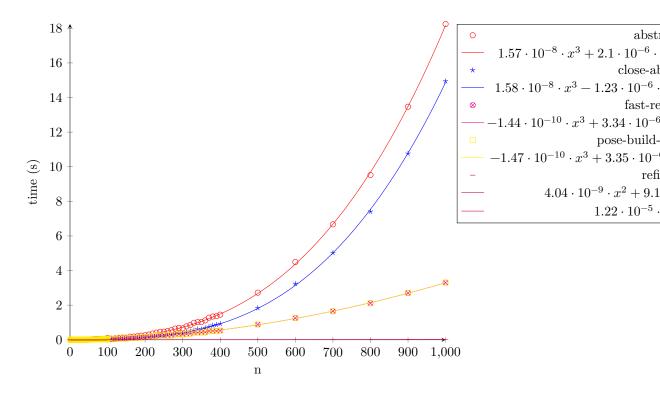
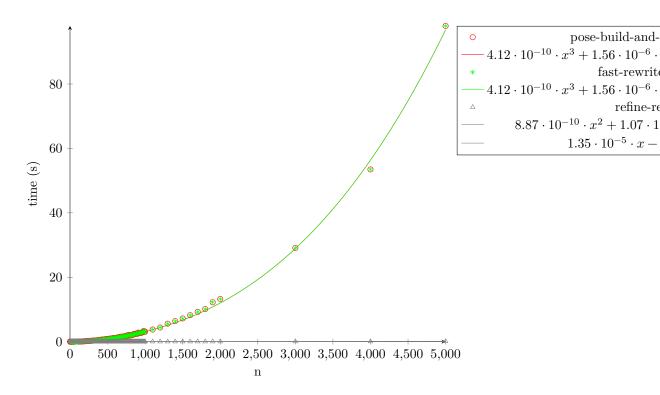


Figure 11: timing-rewrite-repeated-app-fast-rewrite



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

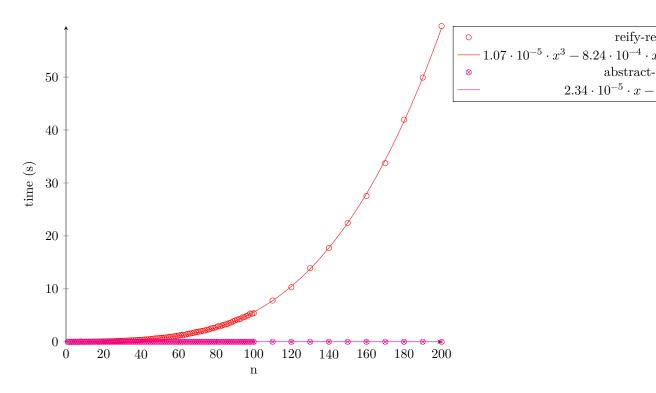
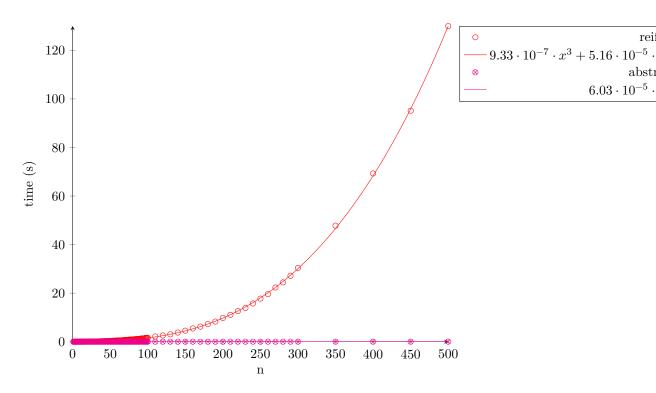


Figure 13: timing-typeclass-reification-let-in-HOAS



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