

Figure 1: timing-pattern

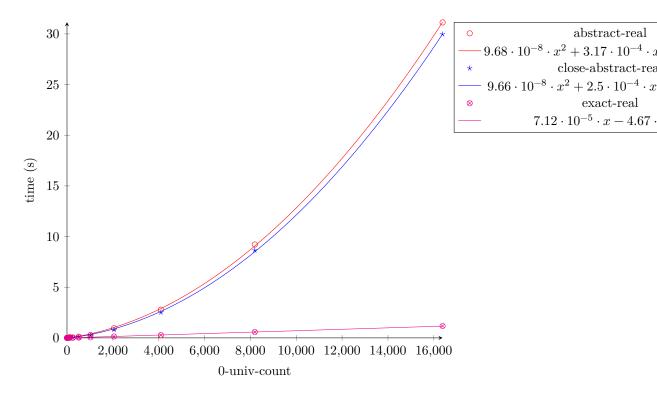
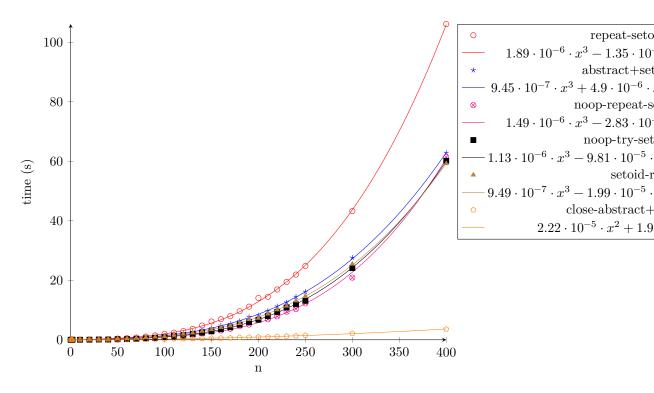
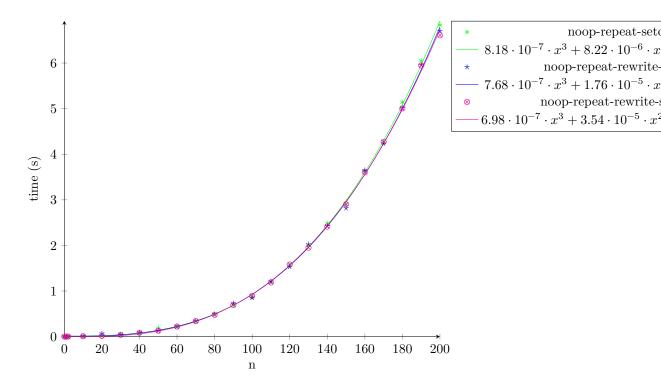


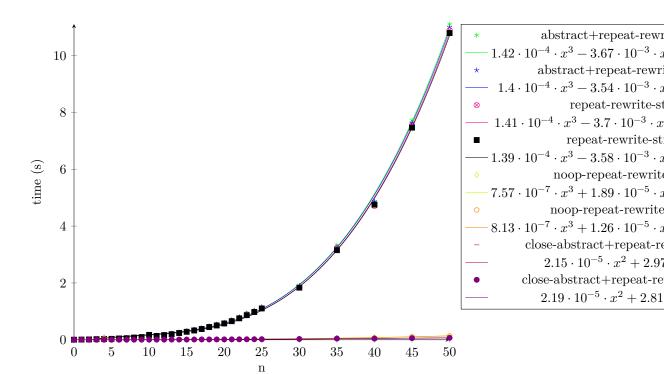
Figure 2: timing-n-polymorphic-universes param-1-n  $\,0\,$ 



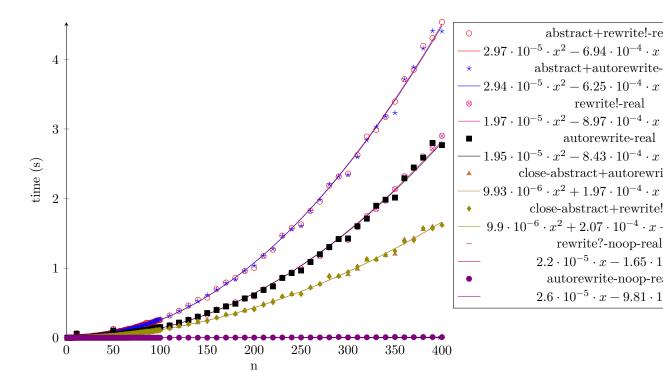
 $Figure \ 3: \ timing-repeat-setoid-rewrite-under-binders$ 



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



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



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

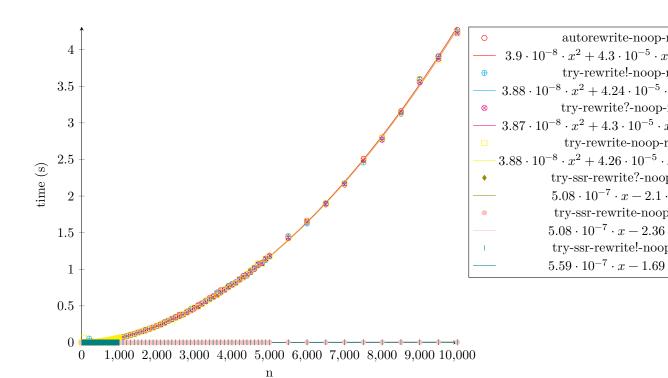


Figure 7: timing-rewrite-repeated-app-autorewrite-noop

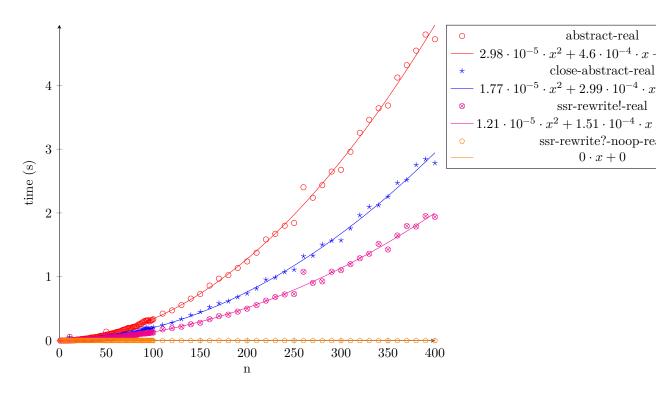
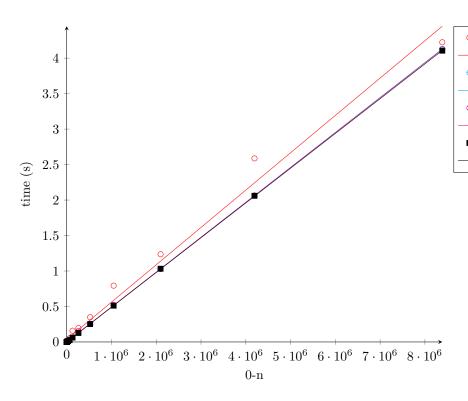


Figure 8: timing-rewrite-repeated-app-ssrrewrite



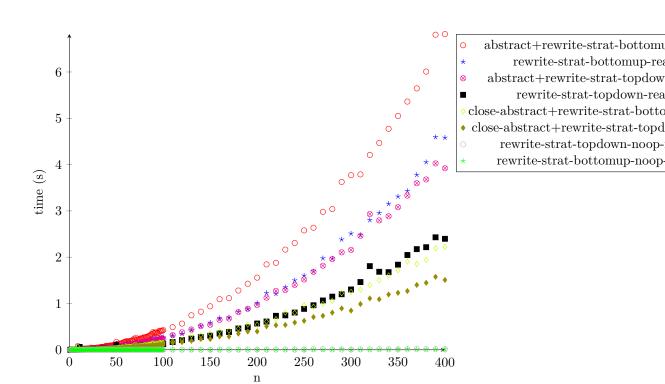
try-ssr-rewrite!-cold-noop-rea  $5.26 \cdot 10^{-7} \cdot x + 3.49 \cdot 10^{-2}$ 

try-ssr-rewrite?-noop-real  $4.92\cdot 10^{-7}\cdot x - 9.37\cdot 10^{-4}$ 

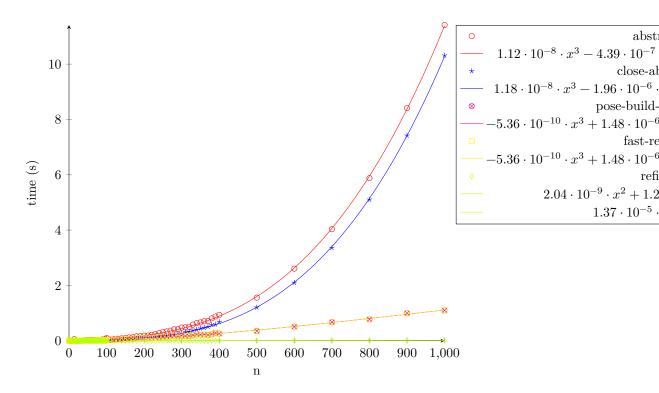
try-ssr-rewrite!-noop-real  $4.91\cdot 10^{-7}\cdot x + 2.2\cdot 10^{-3}$ 

try-ssr-rewrite-noop-real  $4.9\cdot 10^{-7}\cdot x - 7.24\cdot 10^{-4}$ 

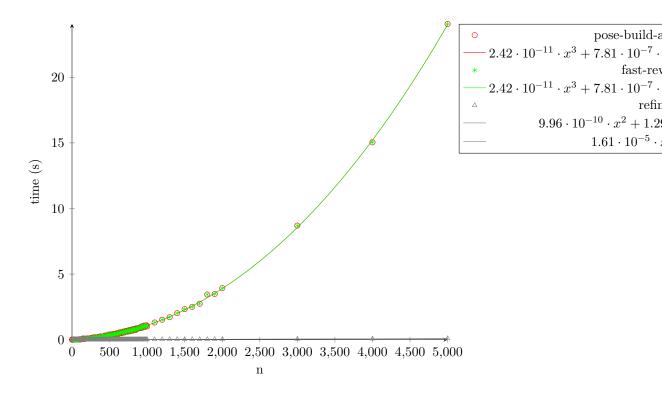
Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn  $\,1\,$ 



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



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



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

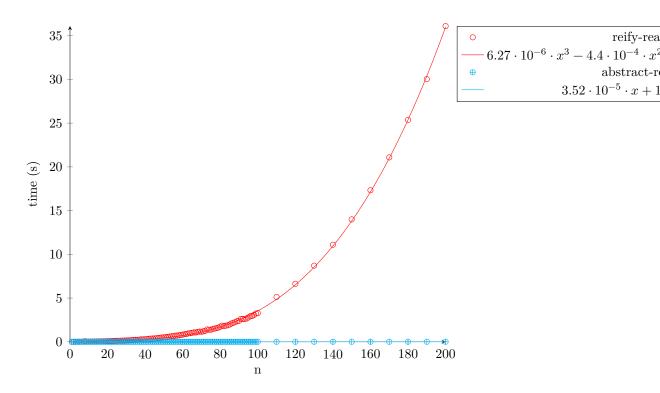
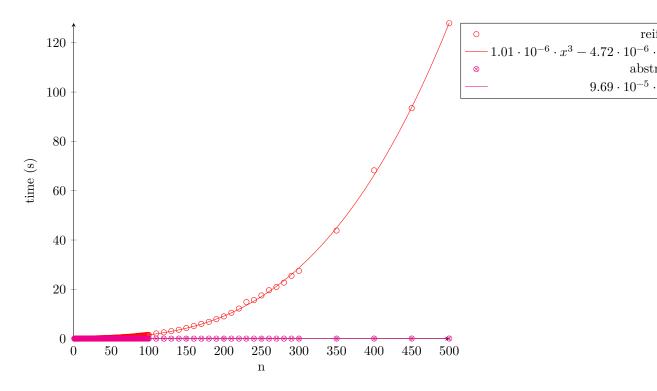


Figure 13: timing-typeclass-reification-let-in-HOAS



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

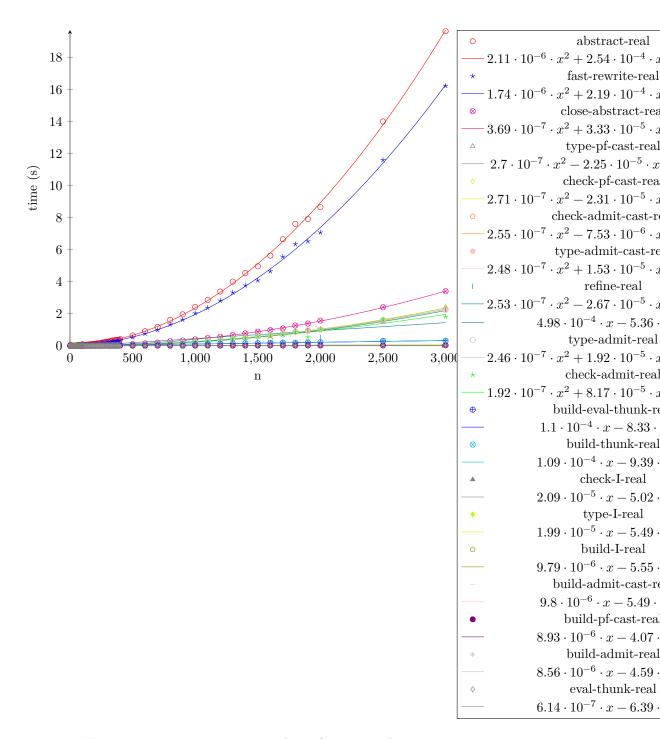


Figure 15: timing-rewrite-repeated-app-fast-rewrite-ltac2