

Figure 1: timing-pattern

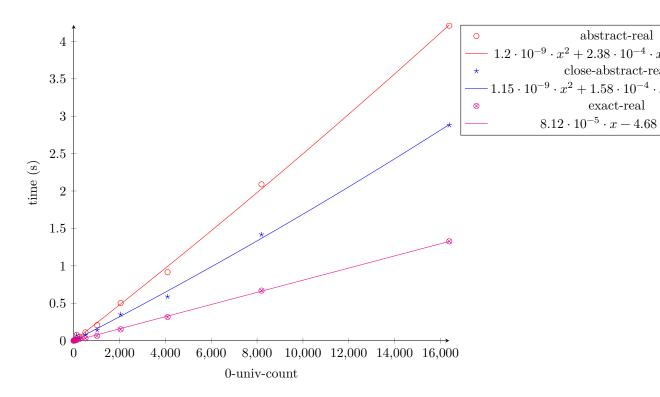
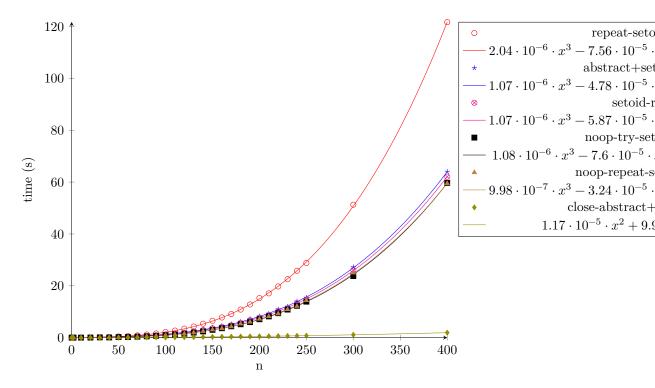
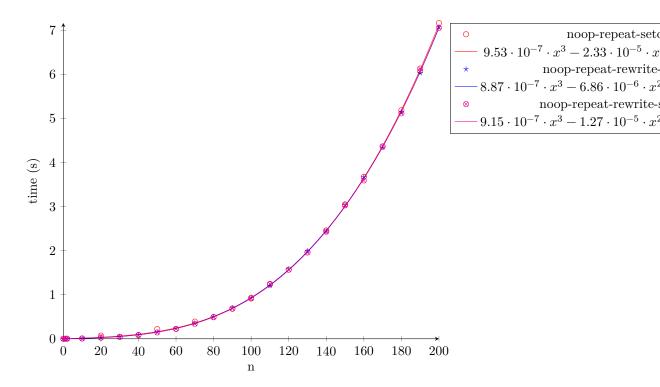


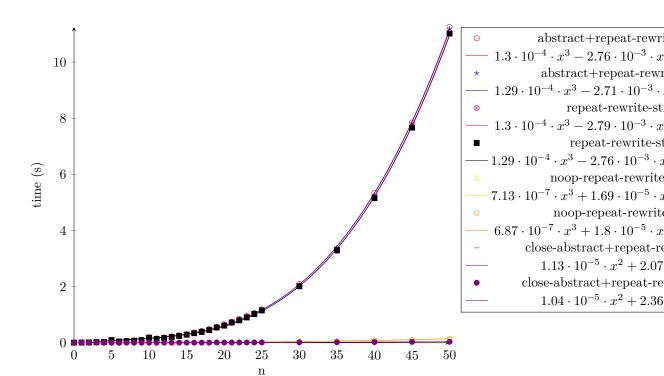
Figure 2: timing-n-polymorphic-universes param-1-n $\,0\,$



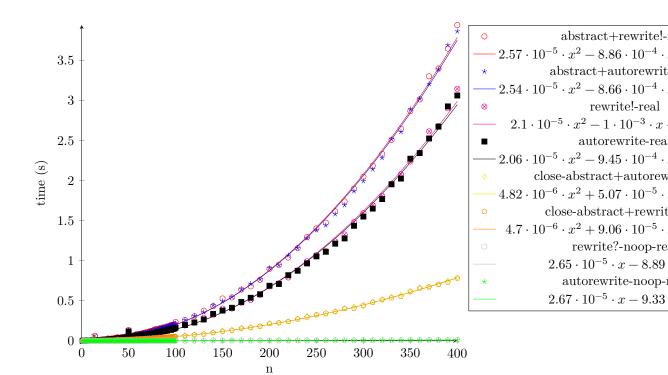
 $Figure \ 3: \ timing-repeat-setoid-rewrite-under-binders$



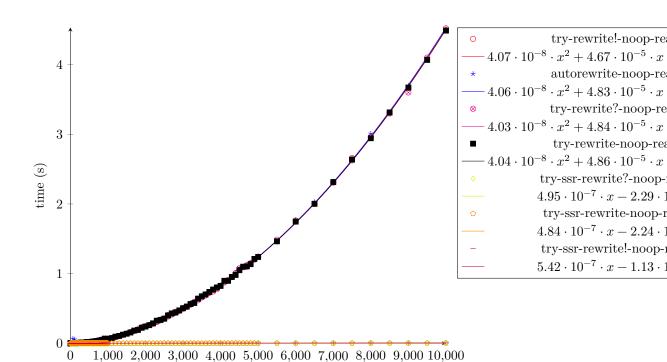
 $Figure\ 4:\ timing-repeat-setoid-rewrite-under-binders-noop$



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



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



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

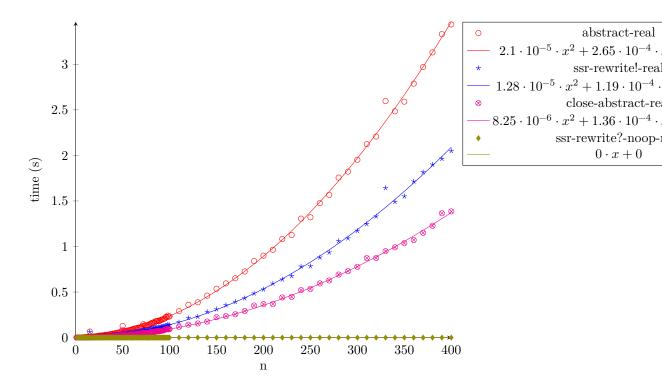
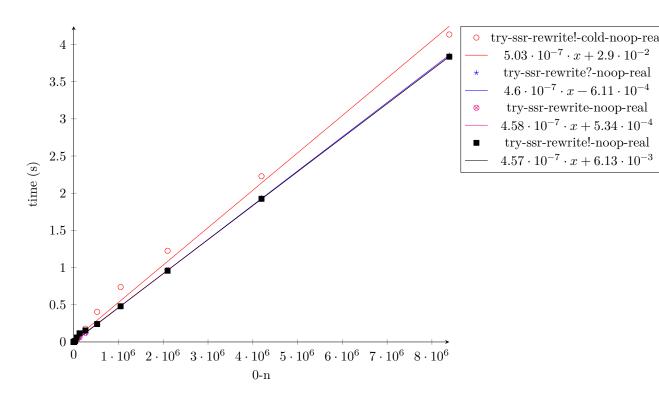


Figure 8: timing-rewrite-repeated-app-ssrrewrite



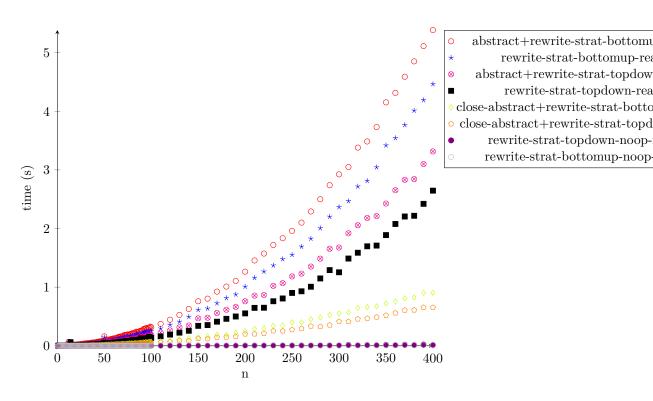
 $5.03 \cdot 10^{-7} \cdot x + 2.9 \cdot 10^{-2}$ try-ssr-rewrite?-noop-real

 $4.6\cdot 10^{-7}\cdot x - 6.11\cdot 10^{-4}$ try-ssr-rewrite-noop-real

 $4.58 \cdot 10^{-7} \cdot x + 5.34 \cdot 10^{-4}$ try-ssr-rewrite!-noop-real

 $4.57 \cdot 10^{-7} \cdot x + 6.13 \cdot 10^{-3}$

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

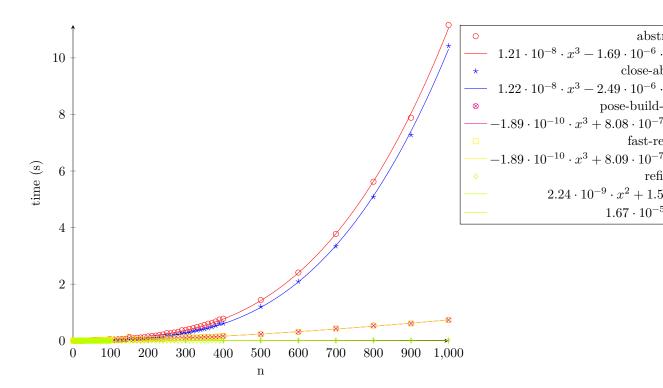


 $abstract + rewrite - strat - bottom \\ \\$

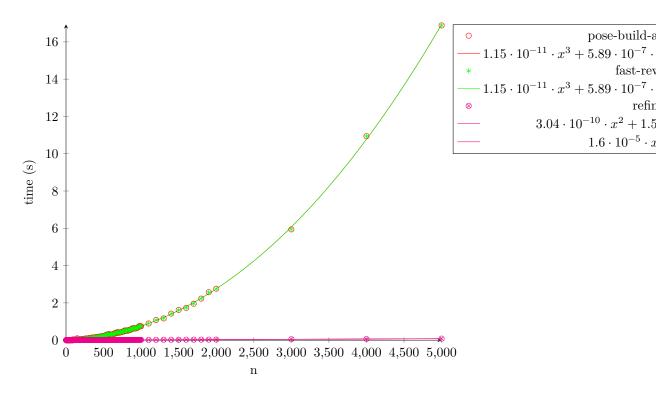
rewrite-strat-bottomup-rea abstract + rewrite - strat - topdowrewrite-strat-topdown-rea

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

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



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



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

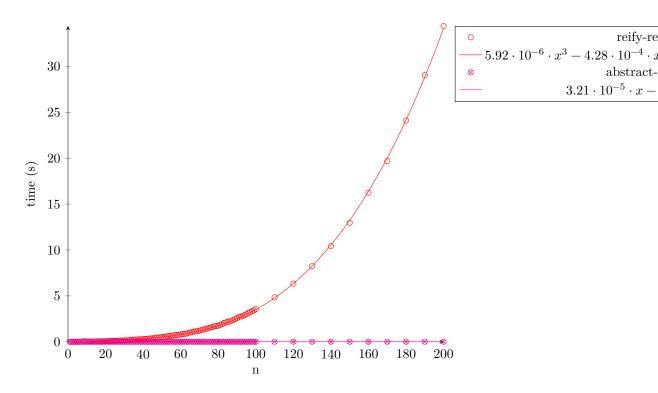
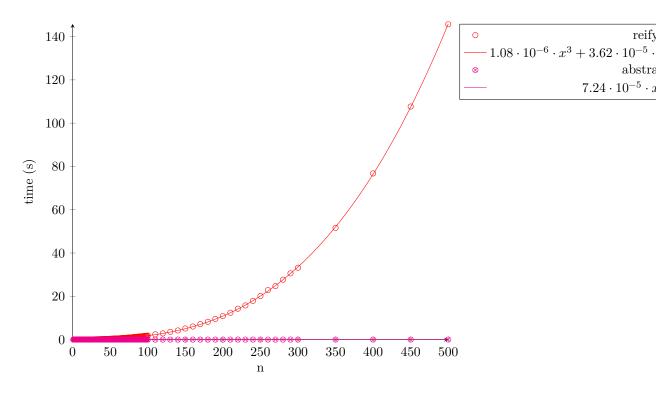


Figure 13: timing-typeclass-reification-let-in-HOAS



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

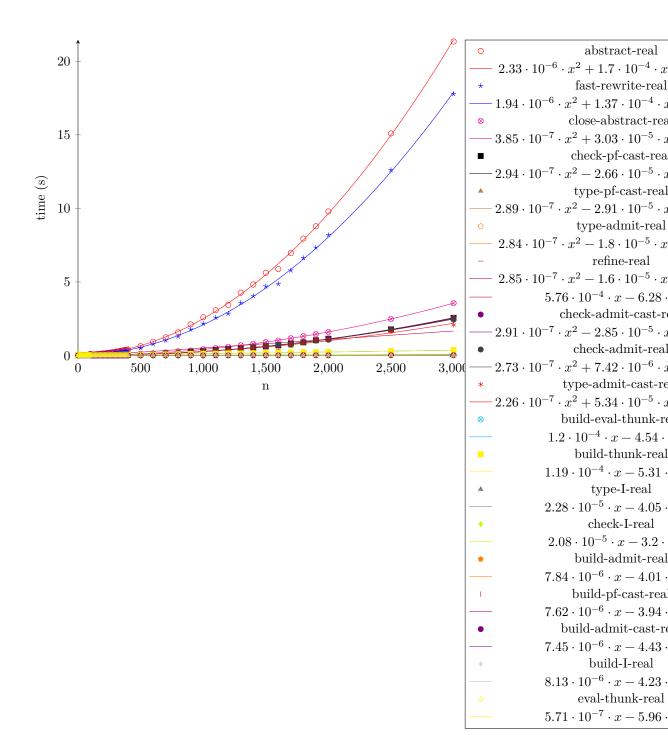


Figure 15: timing-rewrite-repeated-app-fast-rewrite-ltac2