

Figure 1: timing-pattern

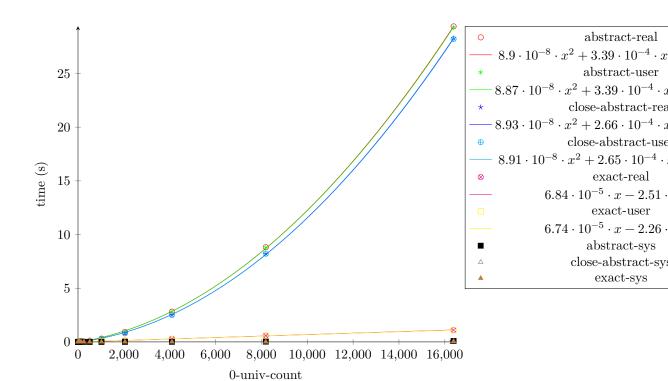


Figure 2: timing-n-polymorphic-universes param-1-n 0

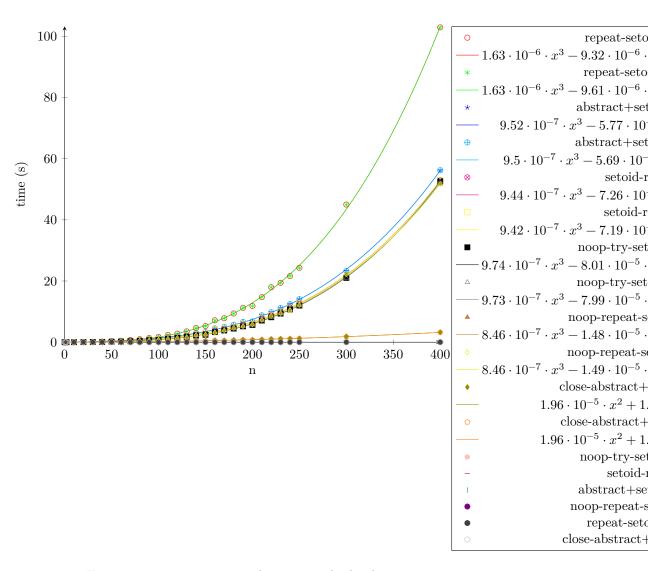


Figure 3: timing-repeat-setoid-rewrite-under-binders

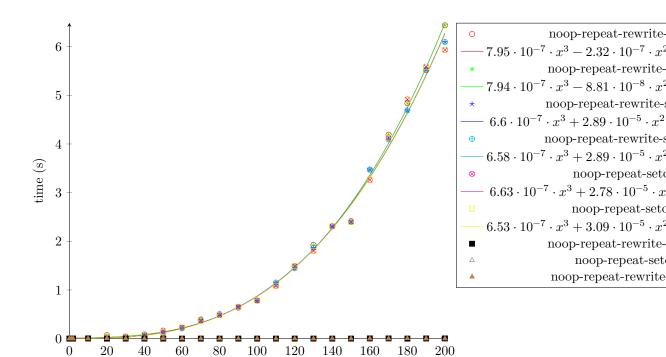


Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

n

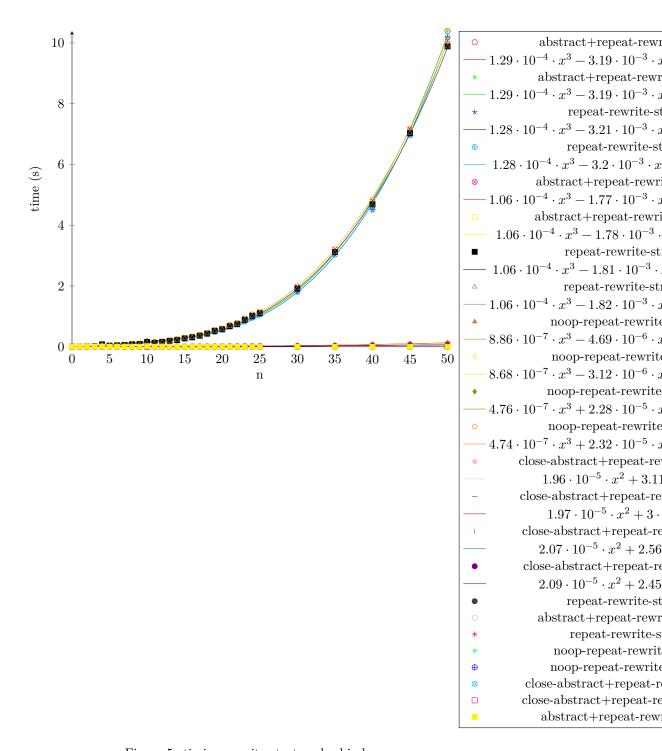


Figure 5: timing-rewrite-strat-under-binders

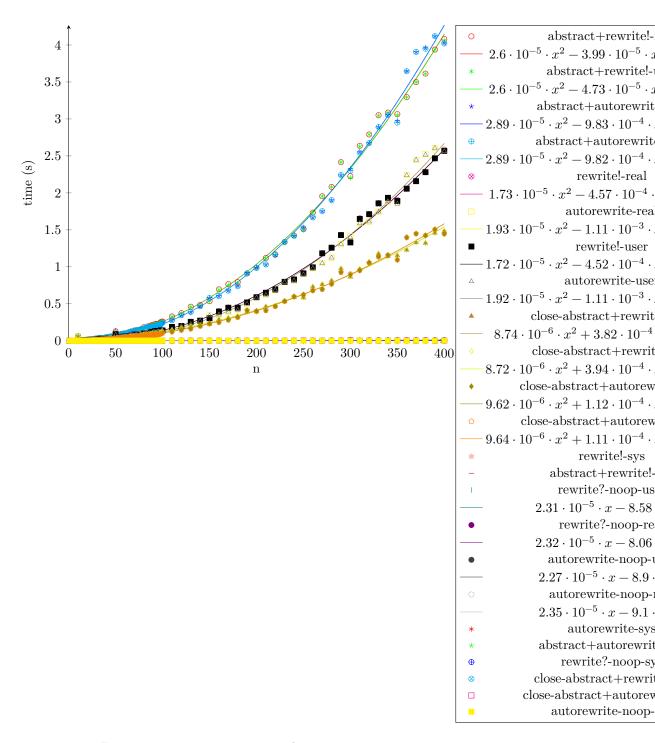


Figure 6: timing-rewrite-repeated-app-autorewrite

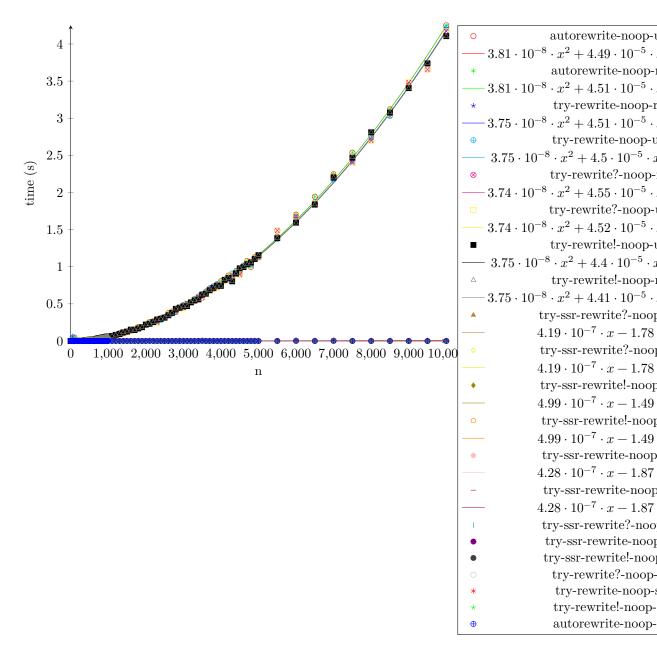


Figure 7: timing-rewrite-repeated-app-autorewrite-noop

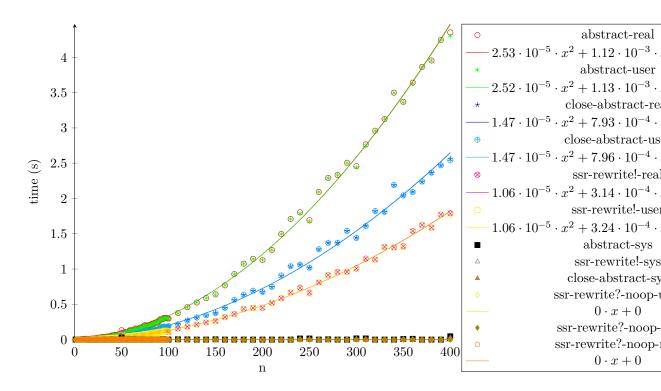


Figure 8: timing-rewrite-repeated-app-ssrrewrite

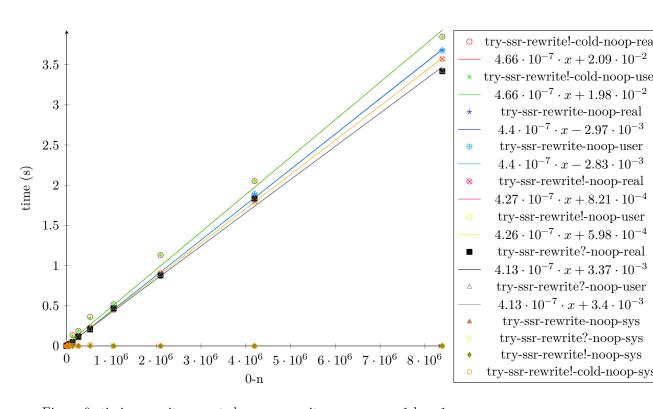


Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn  $\ 1$ 

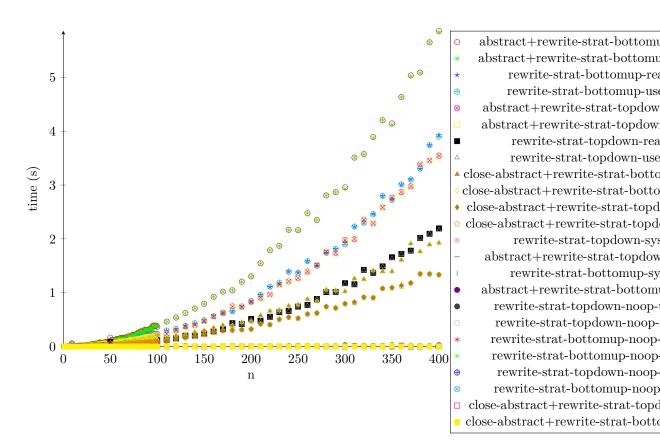


Figure 10: timing-rewrite-repeated-app-rewrite-strat

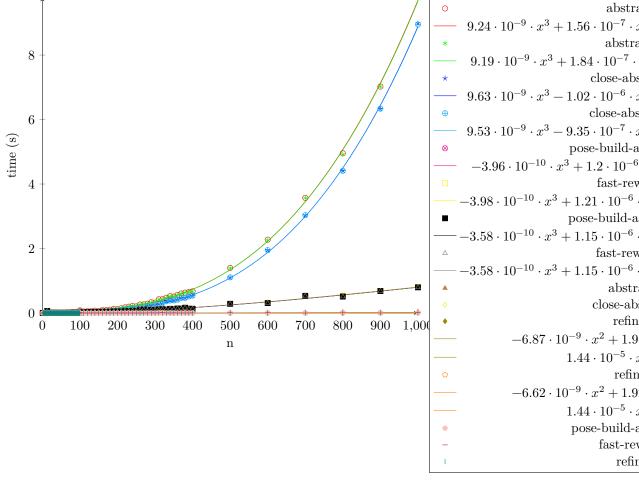
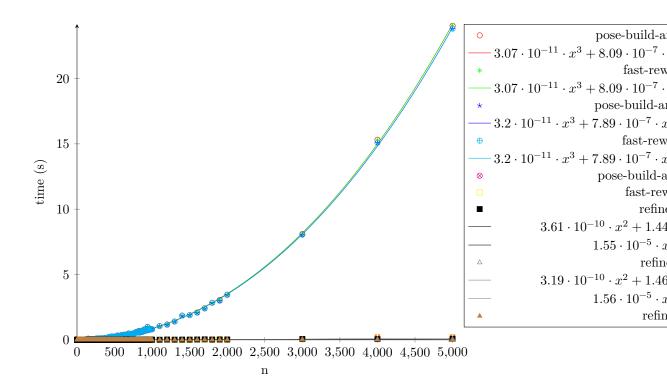
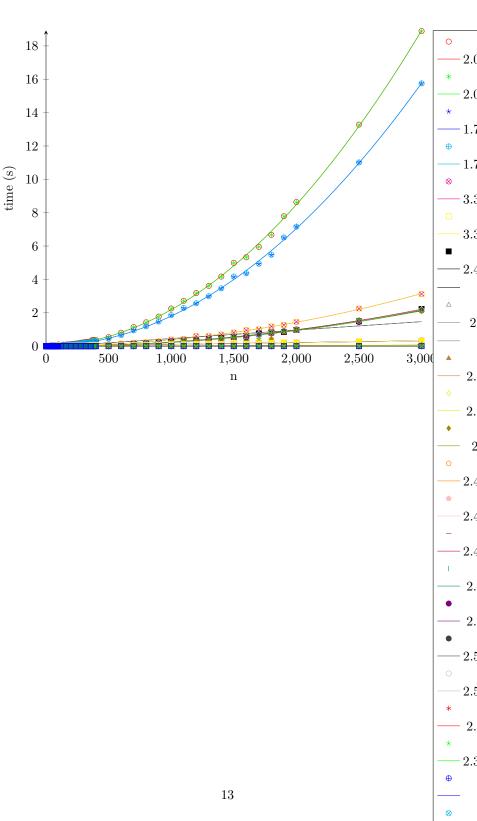


Figure 11: timing-rewrite-repeated-app-fast-rewrite



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



 $2.07 \cdot 10^{-6} \cdot x^2 + 1.06 \cdot 10^{-4} \cdot x^2$  $2.07 \cdot 10^{-6} \cdot x^2 + 1.03 \cdot 10^{-4} \cdot x^2$  $1.73 \cdot 10^{-6} \cdot x^2 + 5.92 \cdot 10^{-5} \cdot x^2$  $1.73 \cdot 10^{-6} \cdot x^2 + 5.83 \cdot 10^{-5} \cdot x^2$  $3.35 \cdot 10^{-7} \cdot x^2 + 4.51 \cdot 10^{-5} \cdot x^2$  $3.36 \cdot 10^{-7} \cdot x^2 + 4.32 \cdot 10^{-5} \cdot x^2$  $2.49 \cdot 10^{-7} \cdot x^2 - 8.99 \cdot 10^{-6} \cdot x^2 - 8.99 \cdot 10^{-6} \cdot x^2 + 10^{-6}$  $2.49 \cdot 10^{-7} \cdot x^2 - 8.6 \cdot 10^{-6} \cdot x^2$  $2.52 \cdot 10^{-7} \cdot x^2 - 1.78 \cdot 10^{-5}$  $2.52 \cdot 10^{-7} \cdot x^2 - 1.78 \cdot 10^{-5} \cdot$  $2.45 \cdot 10^{-7} \cdot x^2 - 2 \cdot 10^{-5} \cdot x$  $2.45 \cdot 10^{-7} \cdot x^2 - 1.95 \cdot 10^{-5} \cdot x^2$  $2.46 \cdot 10^{-7} \cdot x^2 - 8.82 \cdot 10^{-7} \cdot x^2$  $2.45 \cdot 10^{-7} \cdot x^2 - 4.37 \cdot 10^{-7} \cdot x^2 = 4.37 \cdot 10^{-7} \cdot x^2 + 4.37 \cdot 10^{-7} \cdot x^2 = 4.37 \cdot 10^{-7} \cdot x^2 + 4.37 \cdot 10^{-7} \cdot x^2 = 4.37 \cdot 10^{-7} \cdot 10^{-7$  $2.4 \cdot 10^{-7} \cdot x^2 - 3.46 \cdot 10^{-6} \cdot x$  $2.4 \cdot 10^{-7} \cdot x^2 - 3.63 \cdot 10^{-6} \cdot x$  $2.59 \cdot 10^{-7} \cdot x^2 - 5.03 \cdot 10^{-5} \cdot x^2 - 5.03 \cdot 10^{-5} \cdot x^2 + 5.03 \cdot 10^{-5} \cdot x^2$  $2.59 \cdot 10^{-7} \cdot x^2 - 5.03 \cdot 10^{-5} \cdot x^2 = 5.03 \cdot 10^{-5} \cdot x^2 + 5.03 \cdot 10^{-5} \cdot x^2$  $2.38 \cdot 10^{-7} \cdot x^2 - 6.45 \cdot 10^{-6}$  $2.37 \cdot 10^{-7} \cdot x^2 - 4.97 \cdot 10^{-6} \cdot x^2 = 4.97 \cdot 10^{-6} \cdot x^2 + 1.00 \cdot 10^{-6} \cdot x^2 = 1.00 \cdot 10^{-6} \cdot x^2$ 

abstract-real

abstract-user

fast-rewrite-real

fast-rewrite-user

close-abstract-rea

close-abstract-use

refine-user

 $5.08 \cdot 10^{-4} \cdot x - 5.53$ refine-real

 $5.08 \cdot 10^{-4} \cdot x - 5.54$ 

check-admit-user

check-admit-real

check-pf-cast-use

check-pf-cast-rea

type-pf-cast-real

type-pf-cast-user

check-admit-cast-r

check-admit-cast-u

type-admit-user

type-admit-real

type-admit-cast-re

type-admit-cast-us

build-eval-thunk-re

 $1.08 \cdot 10^{-4} \cdot x - 4.35 \cdot$ build-eval-thunk-u  $1.07 \cdot 10^{-4} \cdot x - 5.82 \cdot$ build-thunk-user  $1.07 \cdot 10^{-4} \cdot x - 6.41 \cdot$ build-thunk-real  $1.07 \cdot 10^{-4} \cdot x - 5.04 \cdot$ abaalt I ugan