

Figure 1: timing-pattern

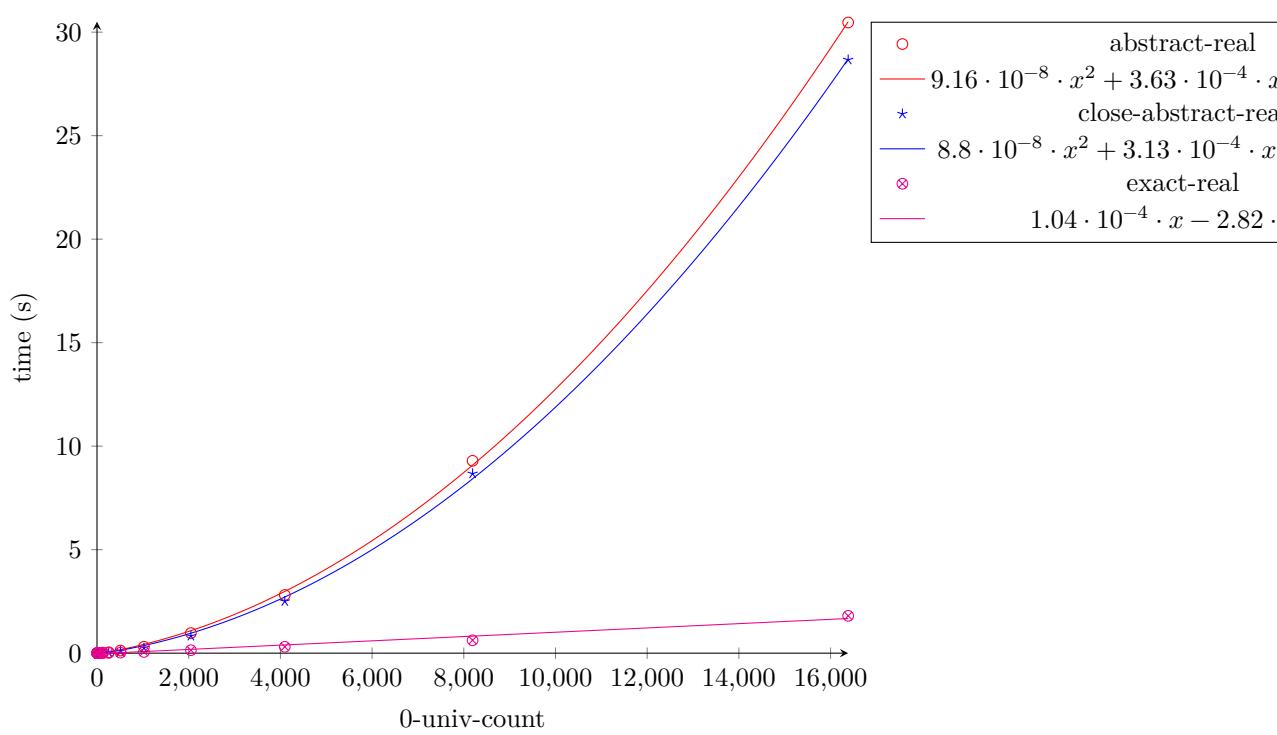


Figure 2: timing-n-polymorphic-universes param-1-n 0

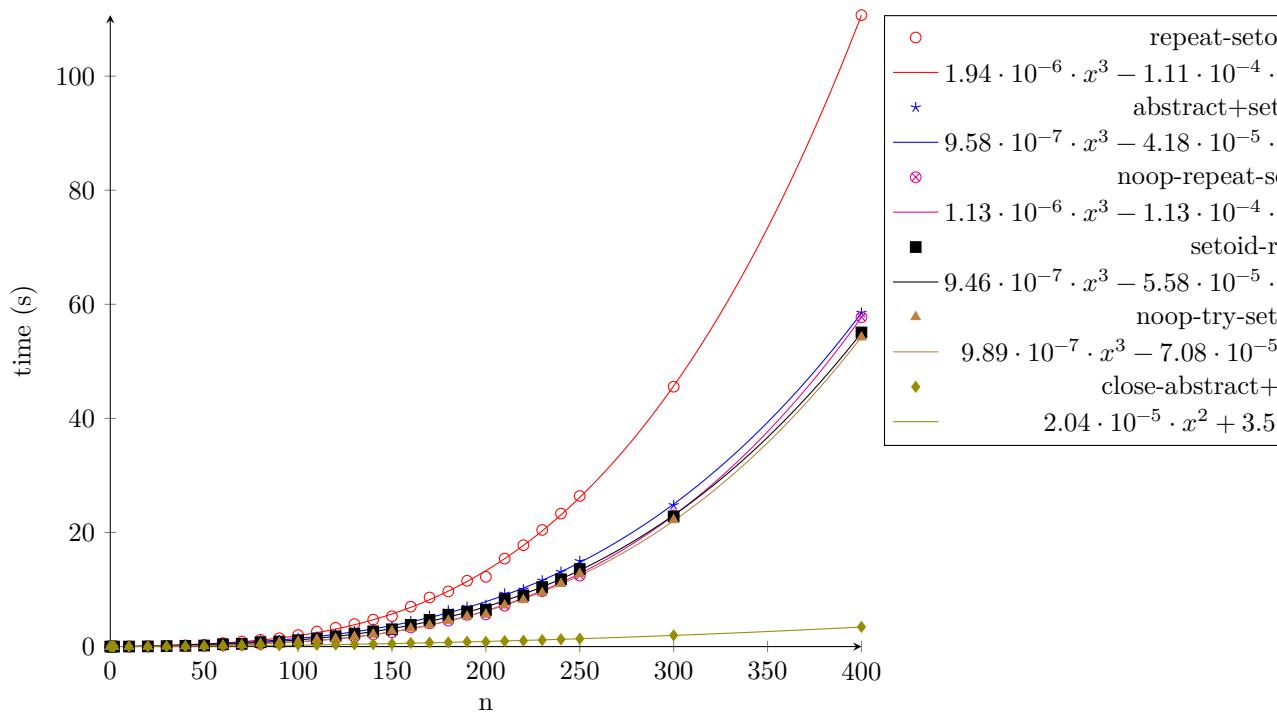


Figure 3: timing-repeat-setoid-rewrite-under-binders

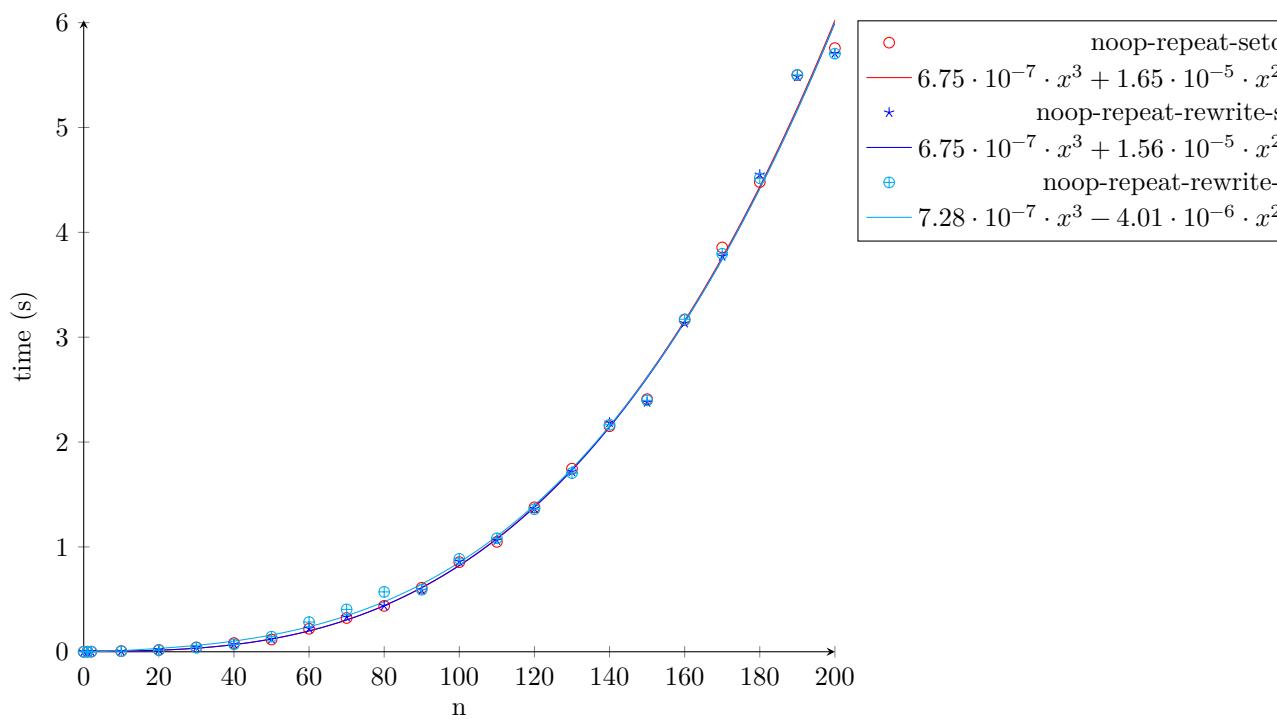


Figure 4: timing-repeat-setoid-rewrite-under-binders-noop

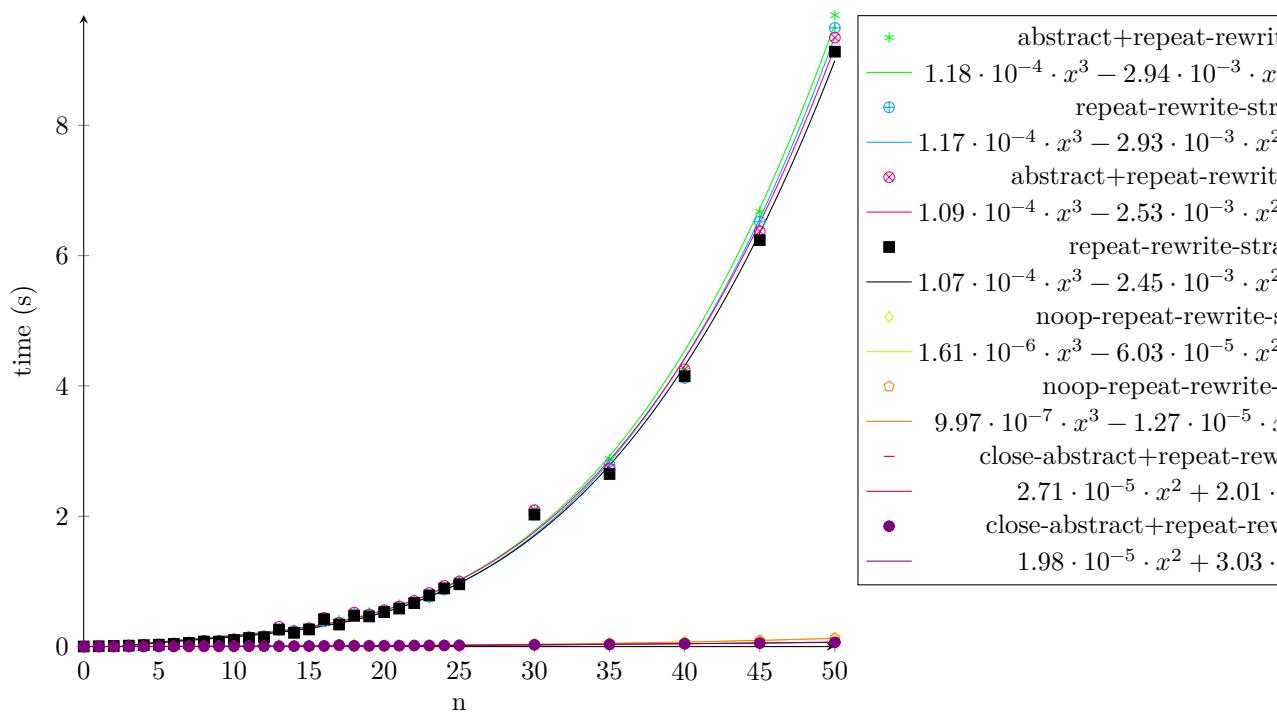


Figure 5: timing-rewrite-strat-under-binders

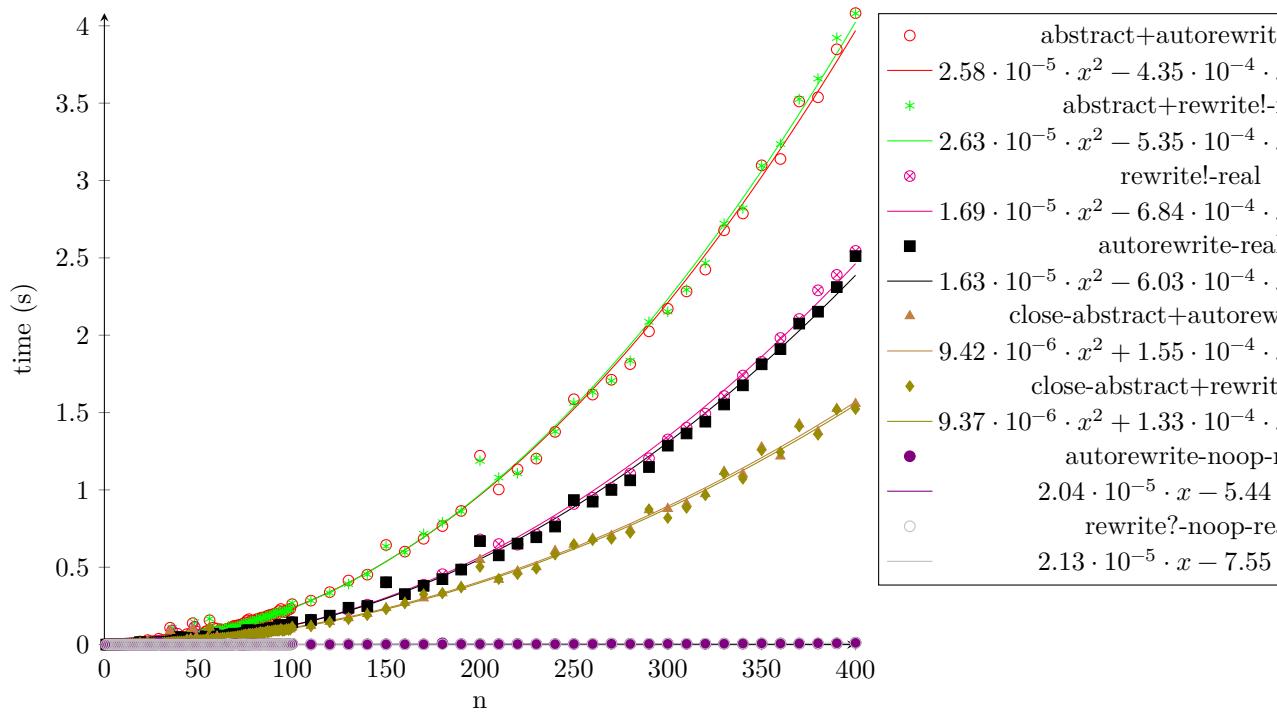


Figure 6: timing-rewrite-repeated-app-autorewrite

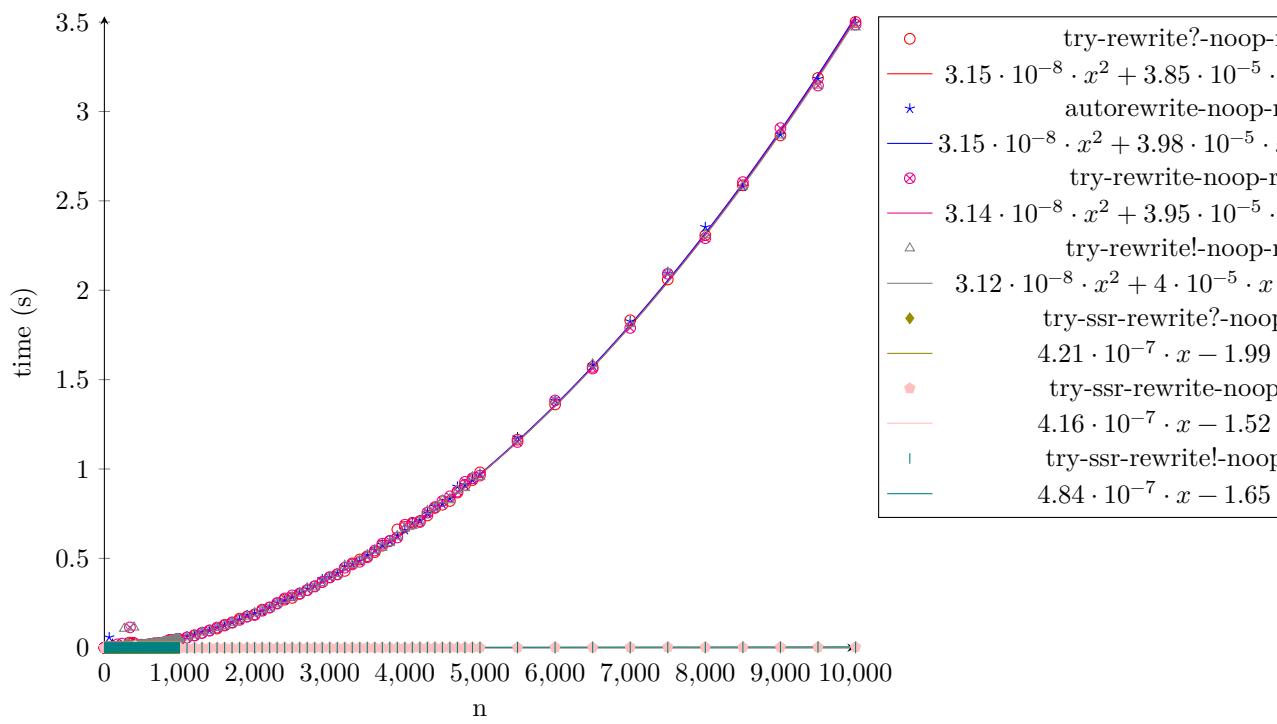


Figure 7: timing-rewrite-repeated-app-autorewrite-noop

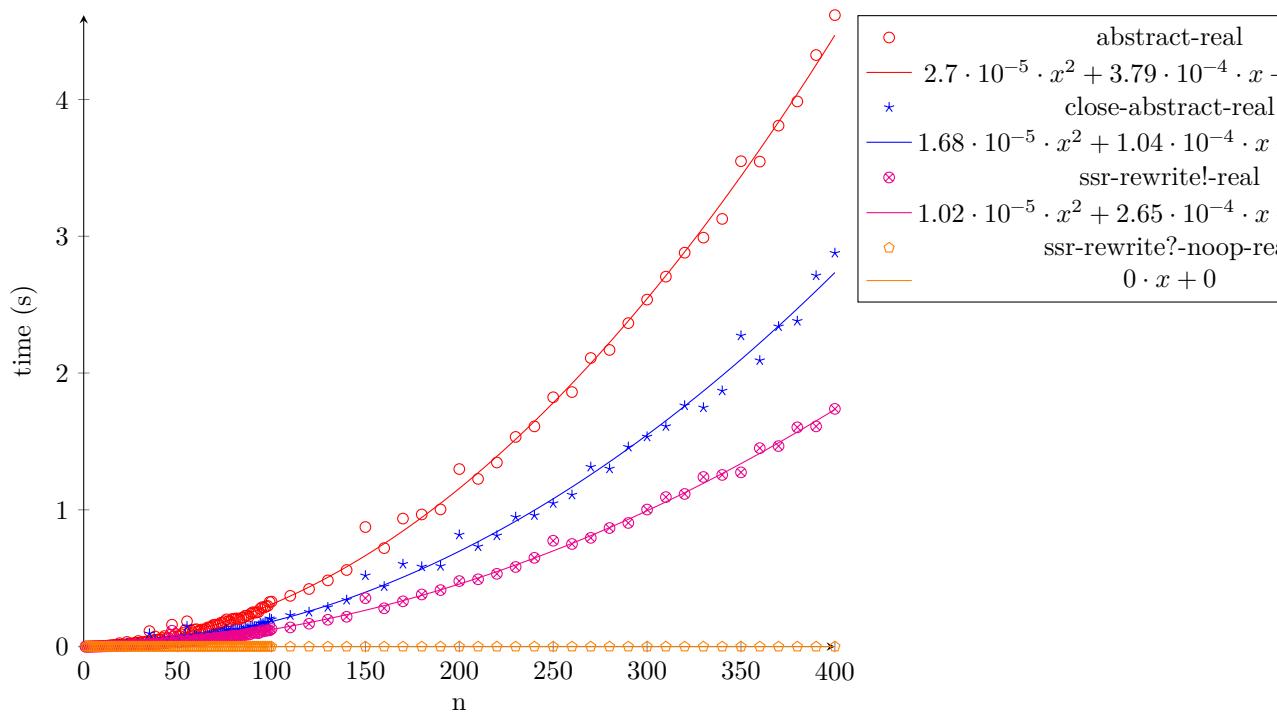


Figure 8: timing-rewrite-repeated-app-ssrrewrite

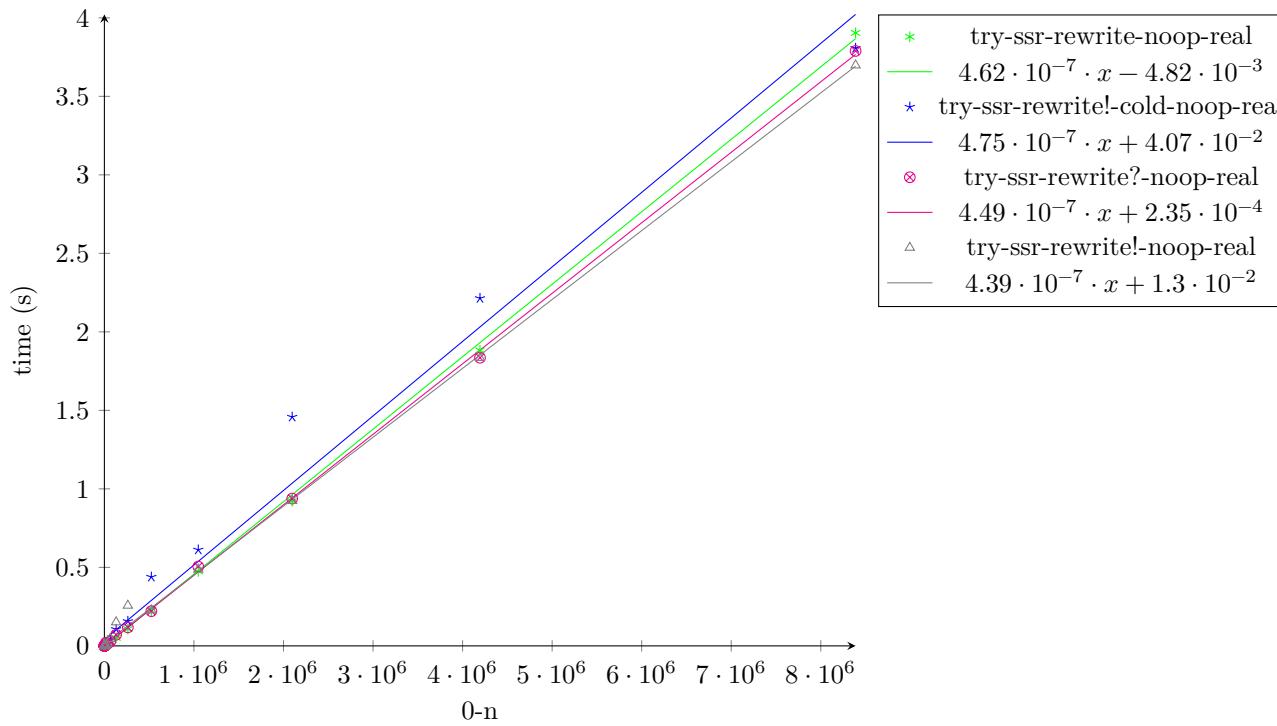


Figure 9: timing-rewrite-repeated-app-ssrrewrite-noop param-1-lgn 1

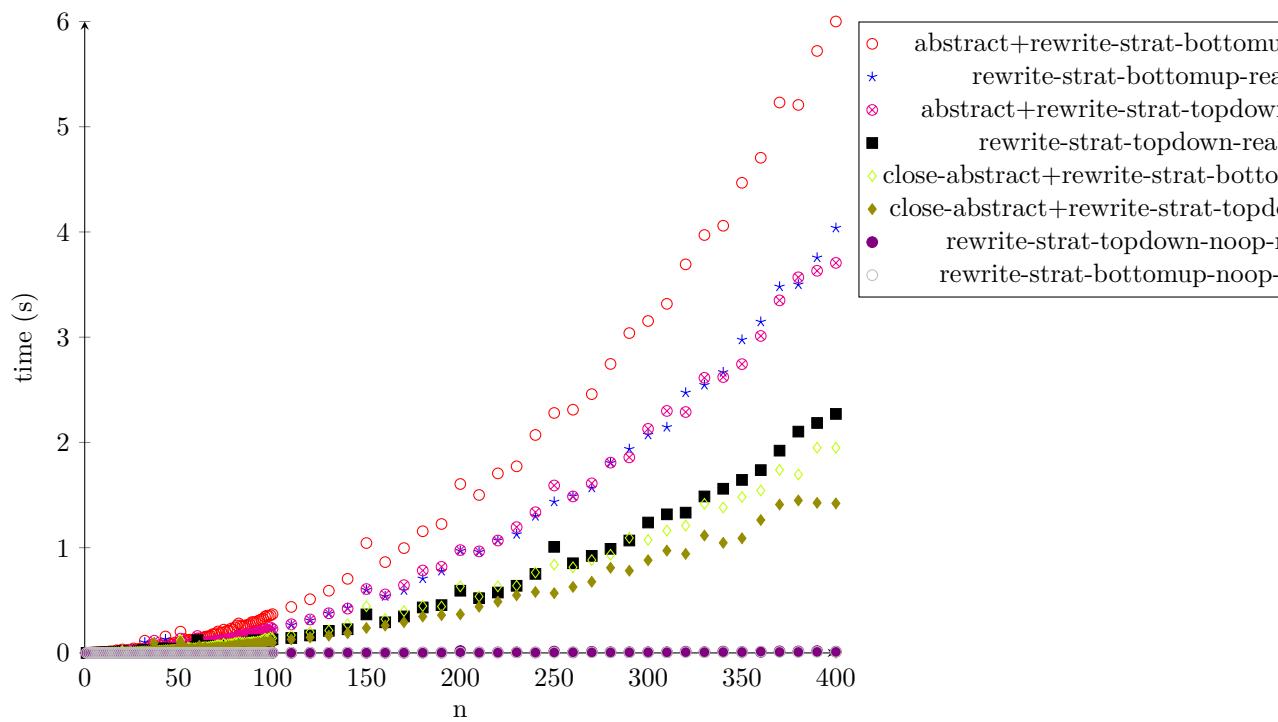


Figure 10: timing-rewrite-repeated-app-rewrite-strat

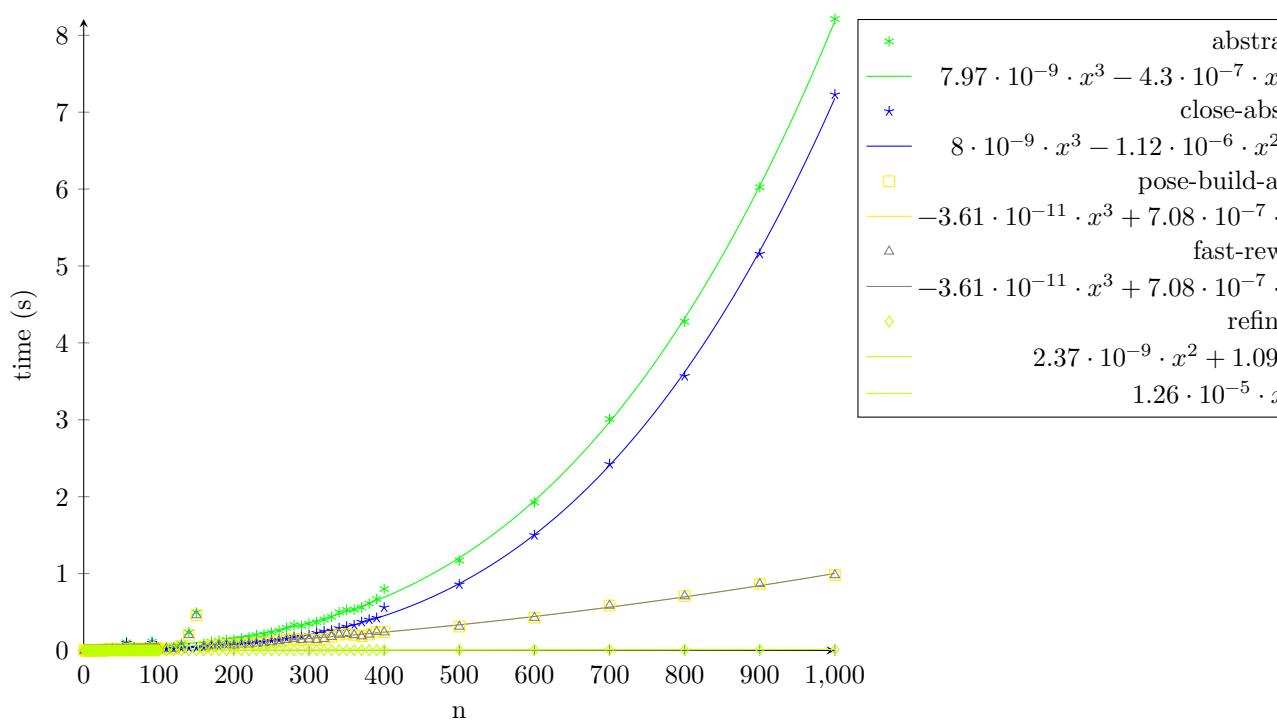


Figure 11: timing-rewrite-repeated-app-fast-rewrite

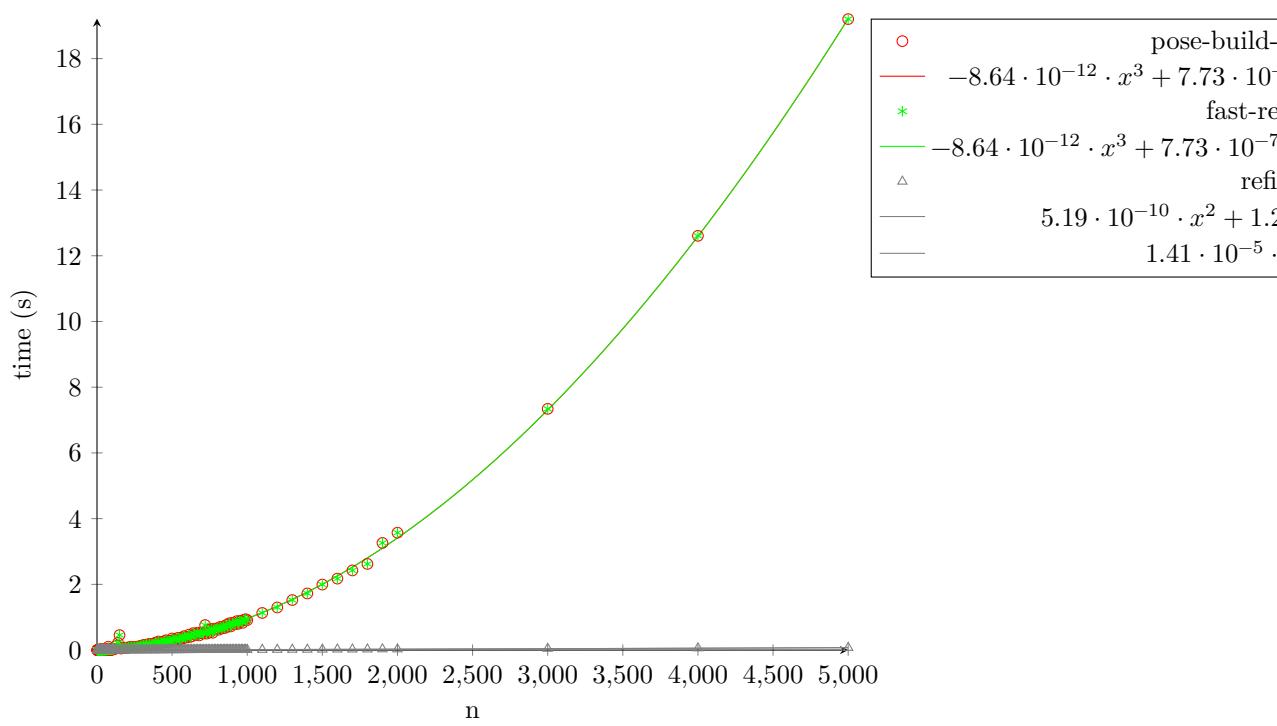


Figure 12: timing-rewrite-repeated-app-fast-rewrite-no-abstract

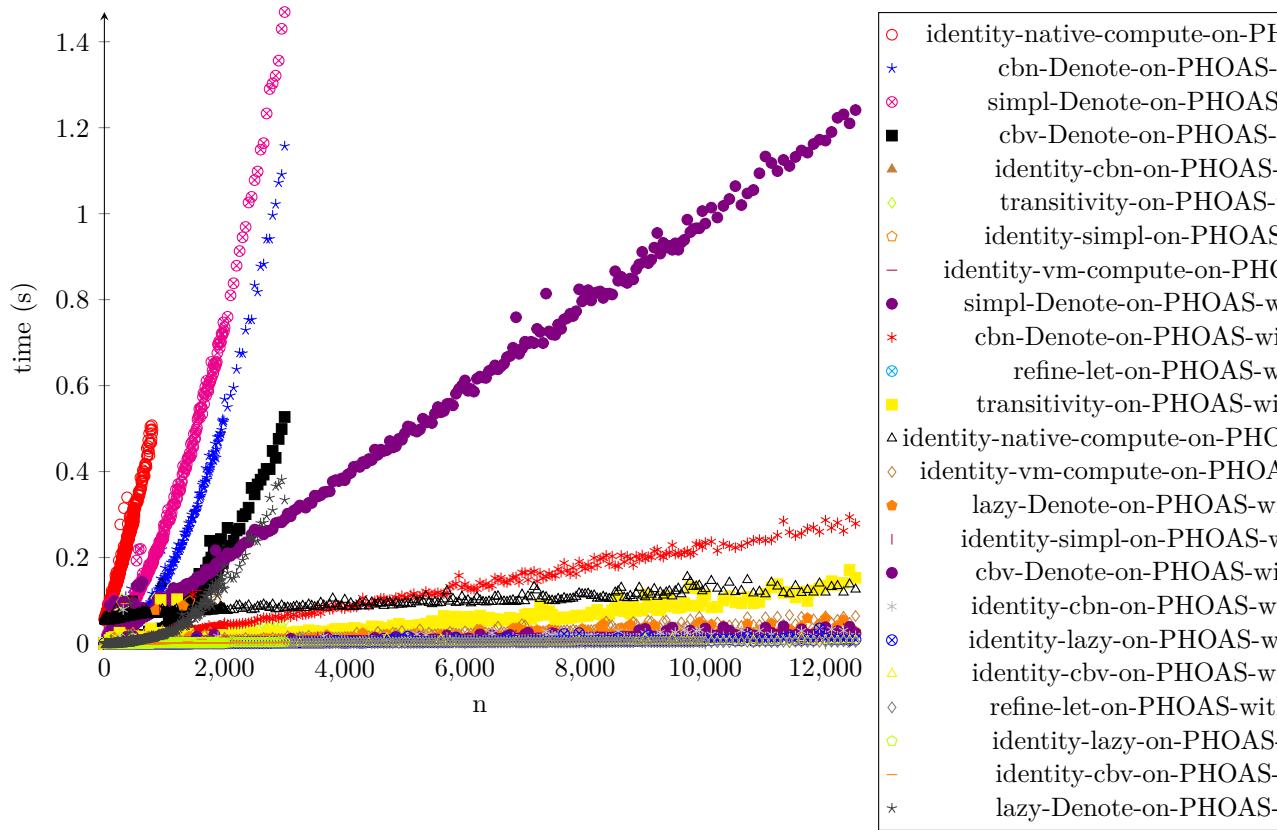


Figure 13: timing-Reify/BaselineStats

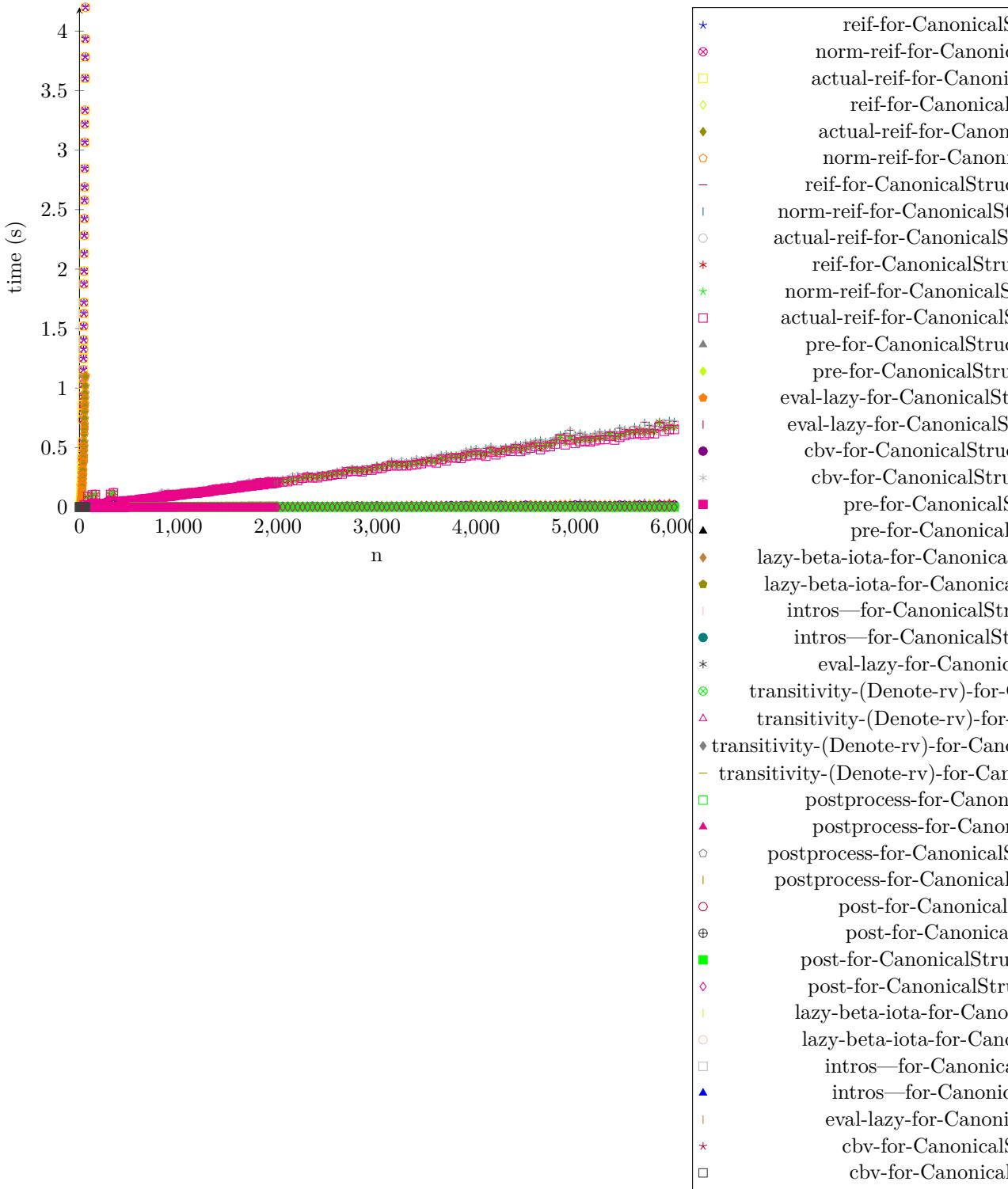
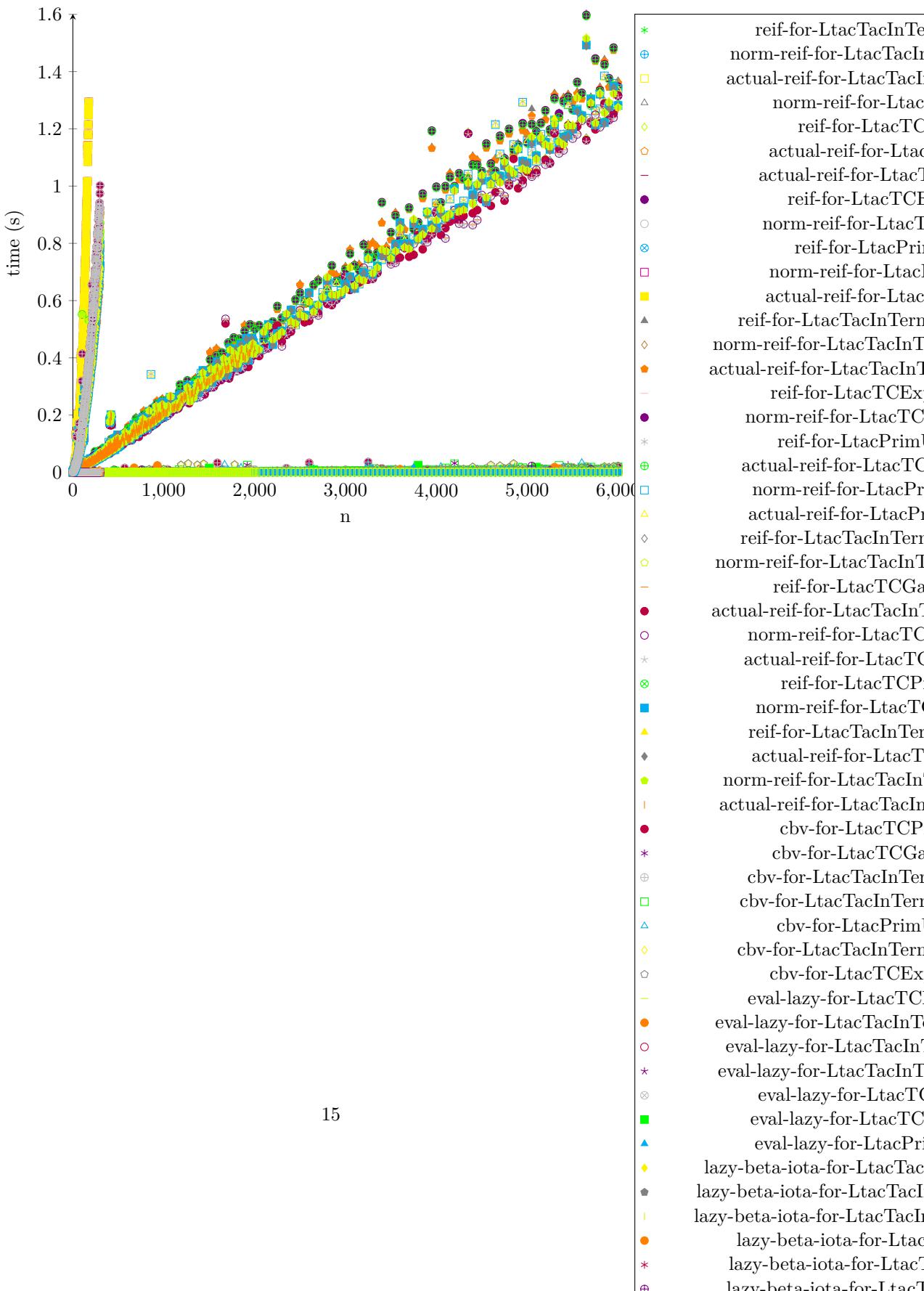


Figure 14: timing-Reify¹⁴/CanonicalStructures



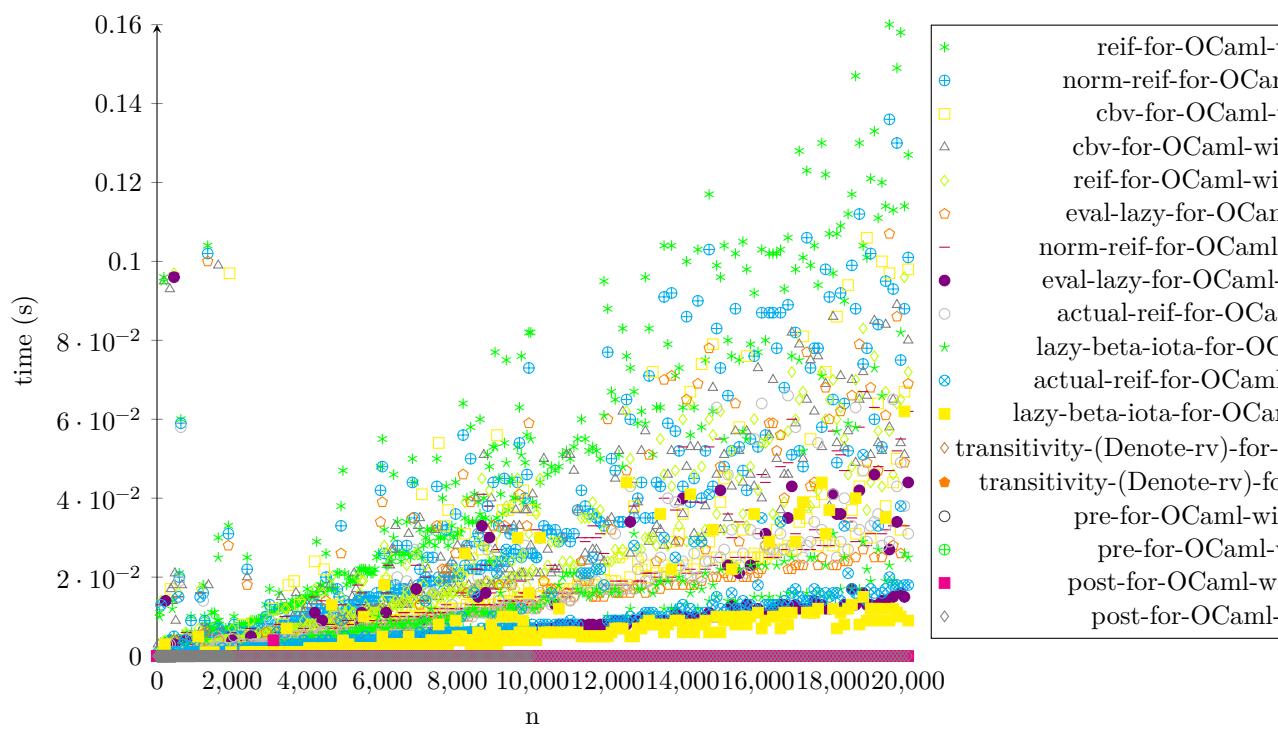
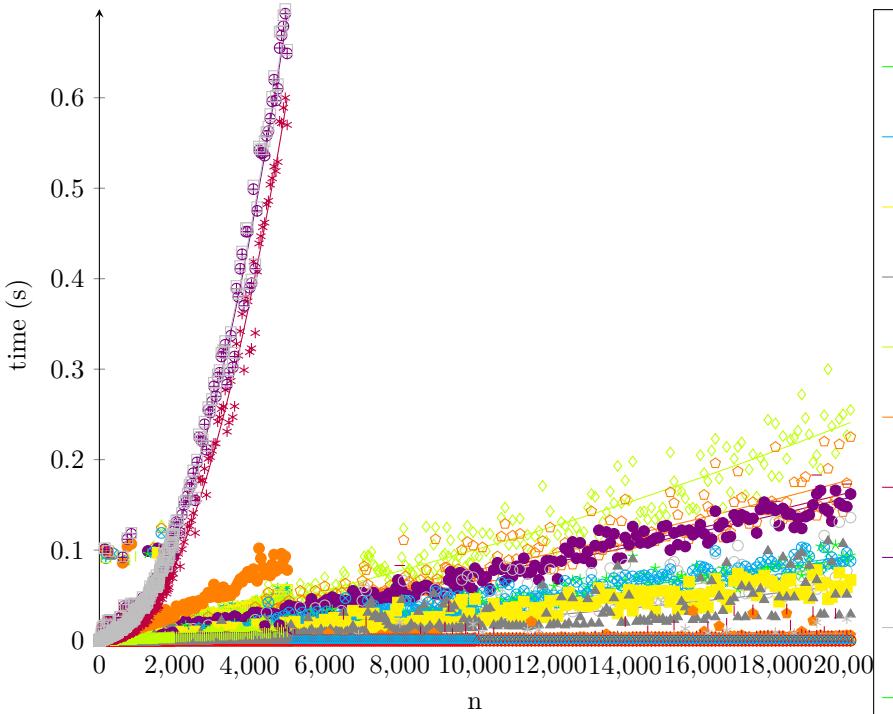


Figure 16: timing-Reify/OCaml



*	reif-for-beta-Parametr
-	$1.42 \cdot 10^{-10} \cdot x^2 + 9$
⊕	actual-reif-for-beta-Parametr
—	$1.53 \cdot 10^{-10} \cdot x^2 + 8$
□	norm-reif-for-beta-Parametr
—	$1.48 \cdot 10^{-10} \cdot x^2 + 9$
△	lazy-beta-iota-for-beta-Parametr
—	$9.09 \cdot 10^{-11} \cdot x^2 + 3$
◊	reif-for-Parametr
—	$2.07 \cdot 10^{-10} \cdot x^2 + 7$
○	norm-reif-for-Parametr
—	$1.14 \cdot 10^{-10} \cdot x^2 + 6$
-	reif-for-Parametricity
●	$1.06 \cdot 10^{-10} \cdot x^2 + 6$
—	norm-reif-for-Parametricity
—	$1.01 \cdot 10^{-10} \cdot x^2 + 5$
○	eval-lazy-for-Parametricity
—	$6.2 \cdot 10^{-11} \cdot x^2 + 4$
*	actual-reif-for-Parametricity
—	$5.66 \cdot 10^{-11} \cdot x^2 + 3$
⊗	actual-reif-for-Parametricity
—	$5.42 \cdot 10^{-11} \cdot x^2 + 3$
■	eval-lazy-for-Parametricity
—	$4.42 \cdot 10^{-11} \cdot x^2 + 2$
▲	lazy-beta-iota-for-Parametricity
—	$9.64 \cdot 10^{-11} \cdot x^2 + 1$
◆	cbv-for-beta-Parametricity
—	$1.46 \cdot 10^{-10} \cdot x^2 + 1$
★	cbv-for-Parametricity
—	$1.14 \cdot 10^{-11} \cdot x^2 + 1$
—	cbv-for-Parametr
●	$1.53 \cdot 10^{-11} \cdot x^2 + 2$
—	lazy-beta-iota-for-beta-Parametr
—	$9.6 \cdot 10^{-11} \cdot x^2 + 7$
*	lazy-beta-iota-for-Parametr
—	$7.71 \cdot 10^{-12} \cdot x^2 + 8$
⊗	transitivity-(Denote-rv)-for-beta-Parametr
△	$7.71 \cdot 10^{-12} \cdot x^2 + 8$
◊	transitivity-(Denote-rv)-for-beta-Parametr
—	$7.71 \cdot 10^{-12} \cdot x^2 + 8$
⊕	transitivity-(Denote-rv)-for-beta-Parametr
■	$7.71 \cdot 10^{-12} \cdot x^2 + 8$
◊	transitivity-(Denote-rv)-for-beta-Parametr
★	$7.71 \cdot 10^{-12} \cdot x^2 + 8$
●	transitivity-(Denote-rv)-for-beta-Parametr
—	$7.71 \cdot 10^{-12} \cdot x^2 + 8$
*	pre-for-beta-Parametr
—	$7.71 \cdot 10^{-12} \cdot x^2 + 8$
⊗	pre-for-beta-Parametr
△	$7.71 \cdot 10^{-12} \cdot x^2 + 8$
◊	pre-for-Parametricity
—	$7.71 \cdot 10^{-12} \cdot x^2 + 8$
●	pre-for-Parametricity
—	$7.71 \cdot 10^{-12} \cdot x^2 + 8$

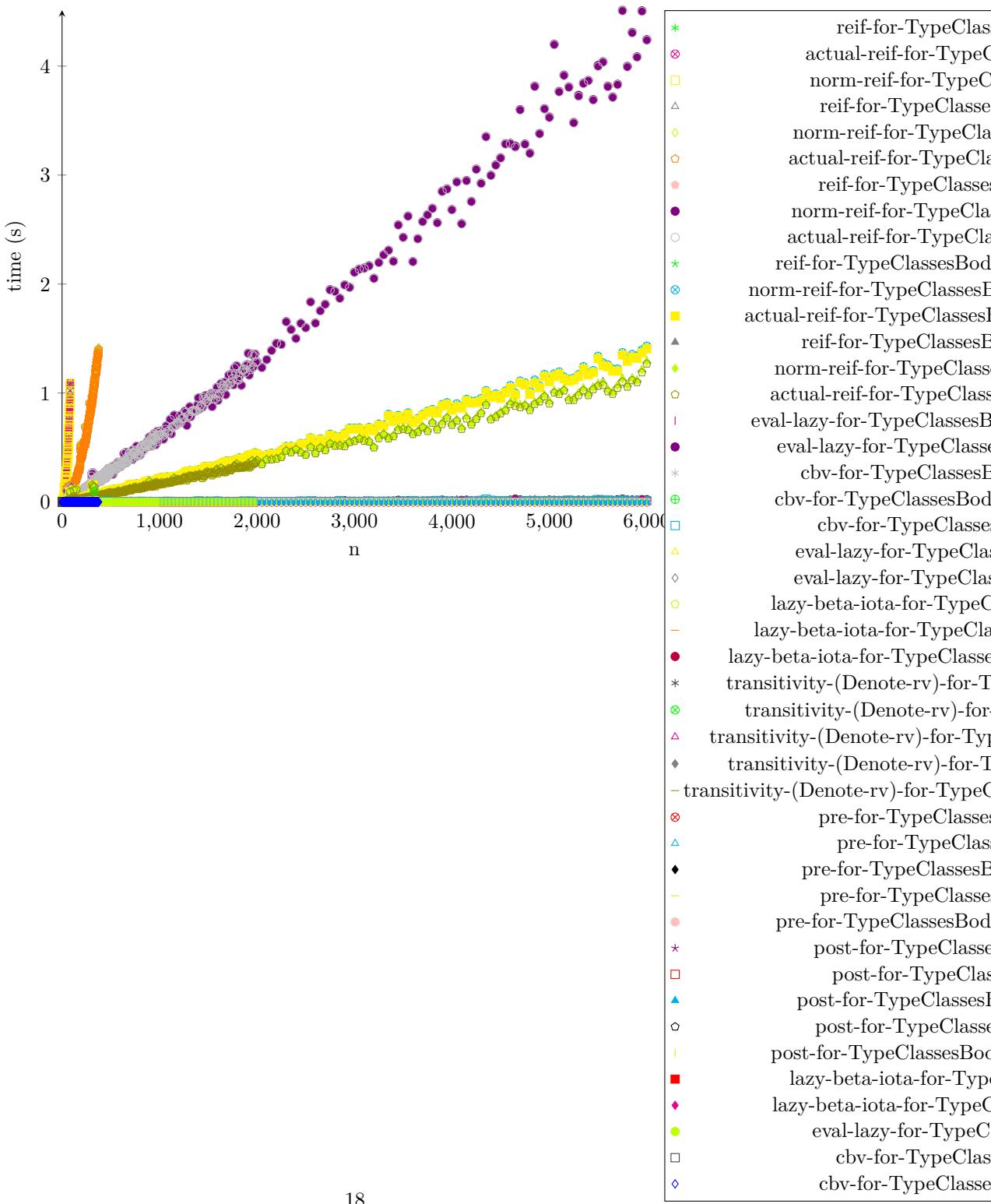


Figure 18: timing-Reify/TypeClasses

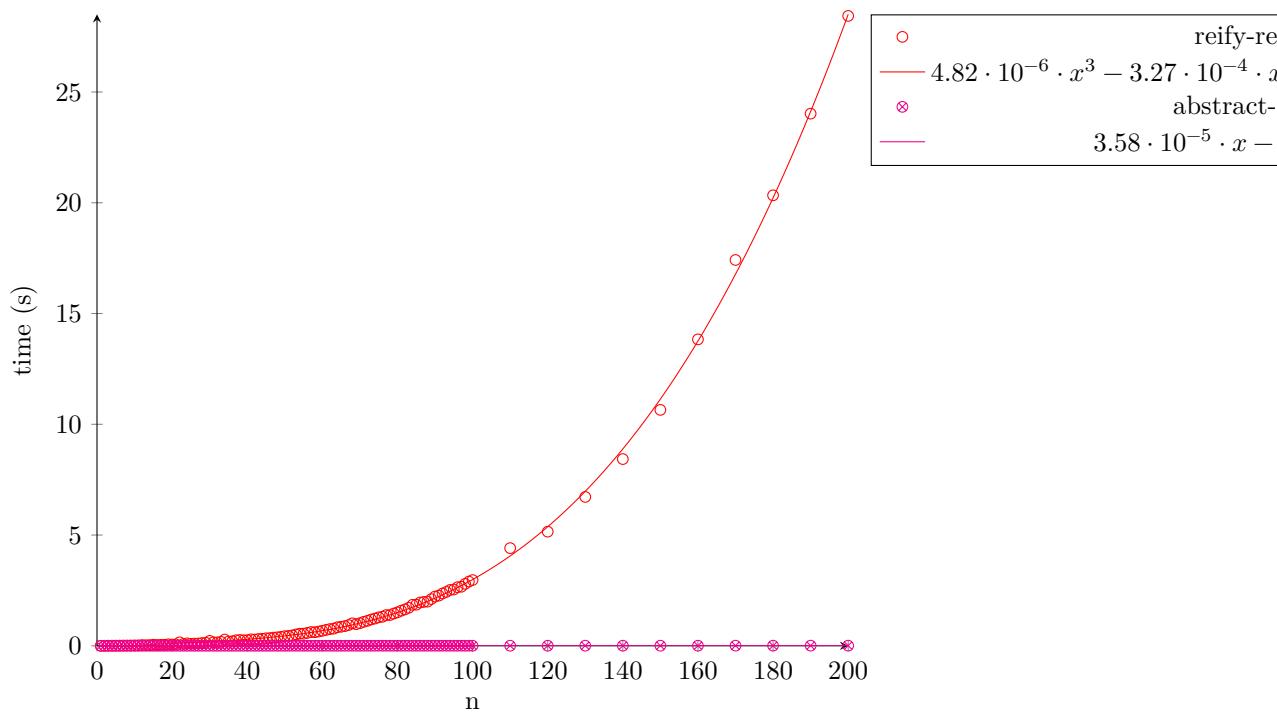


Figure 19: timing-typeclass-reification-let-in-HOAS

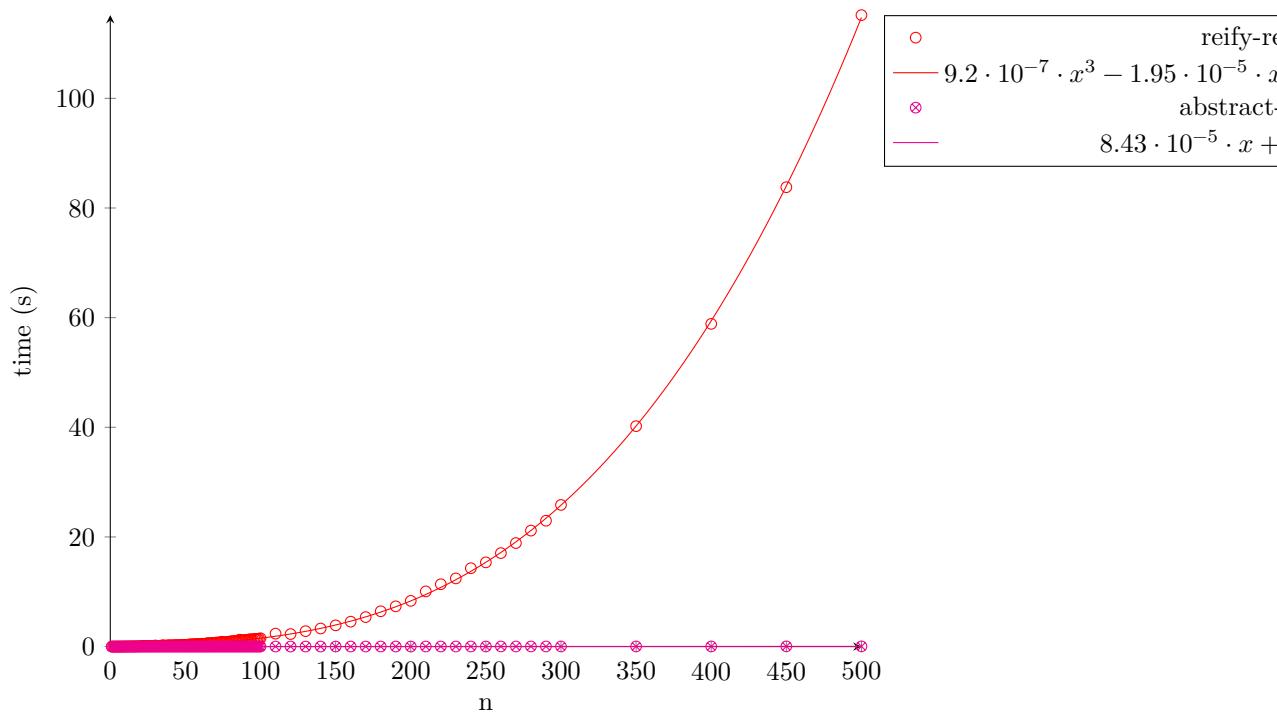


Figure 20: timing-typeclass-reification-let-in-PHOAS

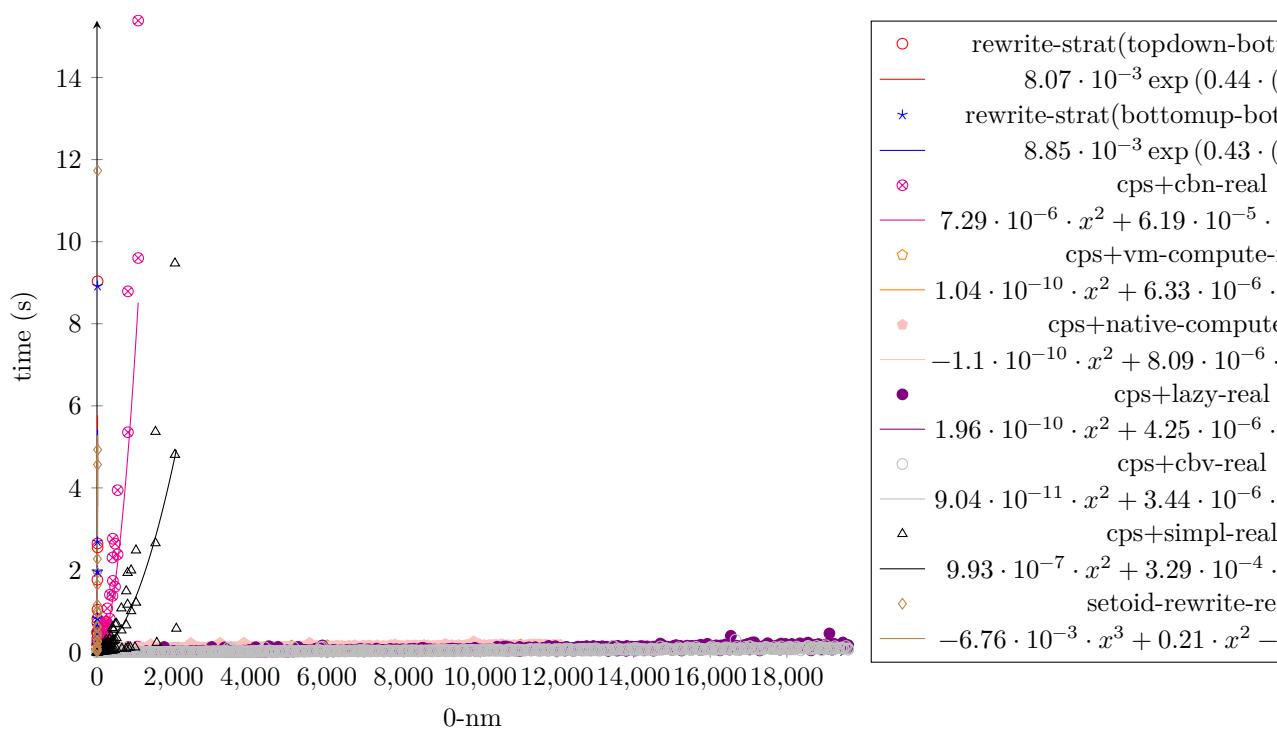


Figure 21: timing-rewrite-lift-lets-map param-1-n 1, param-2-m 1

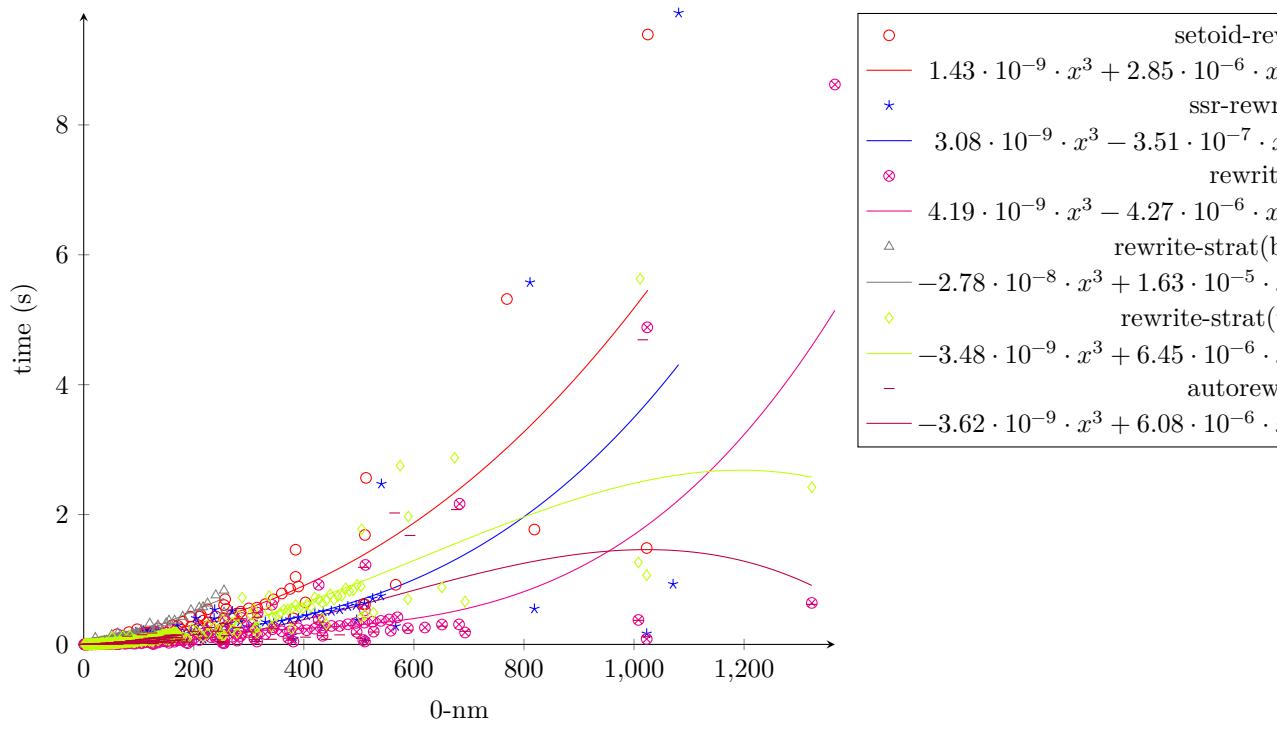


Figure 22: timing-rewrite-plus-0-tree param-1-n 0, param-2-m 1, param-3-input-size 5, param-4-output-size 3, param-5-num-rewrites 1

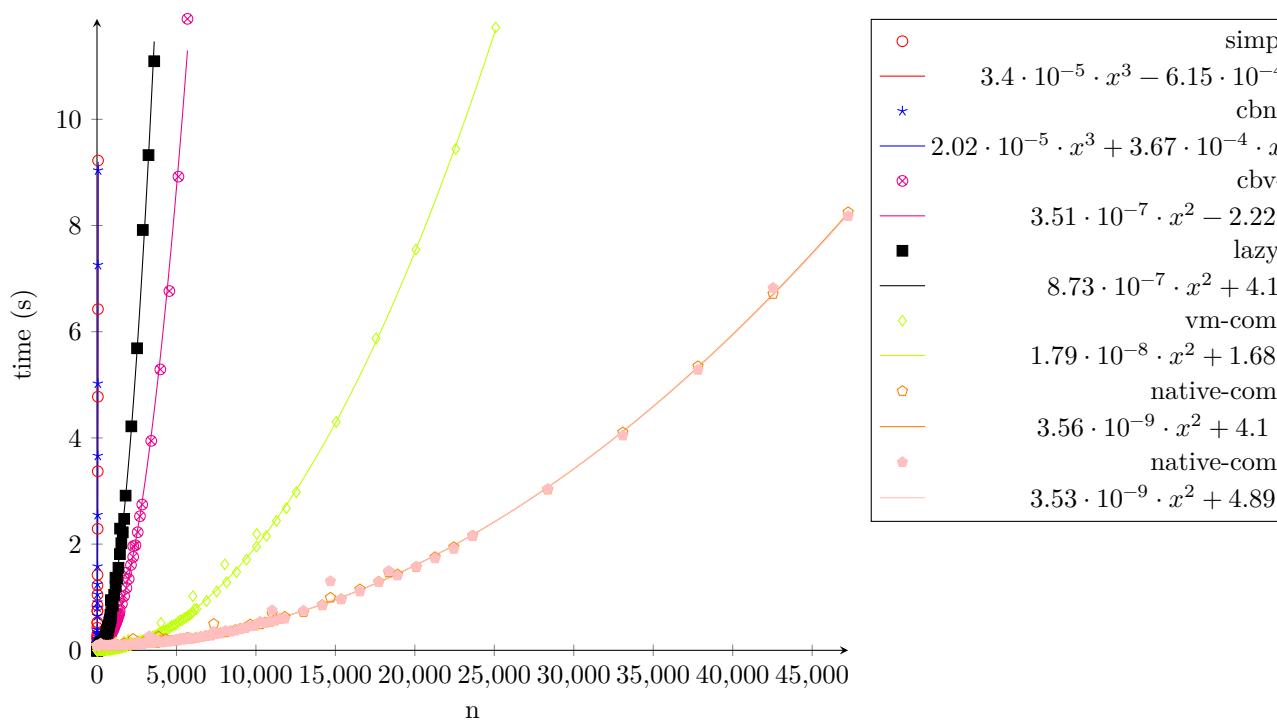


Figure 23: timing-sieve-of-eratosthenes

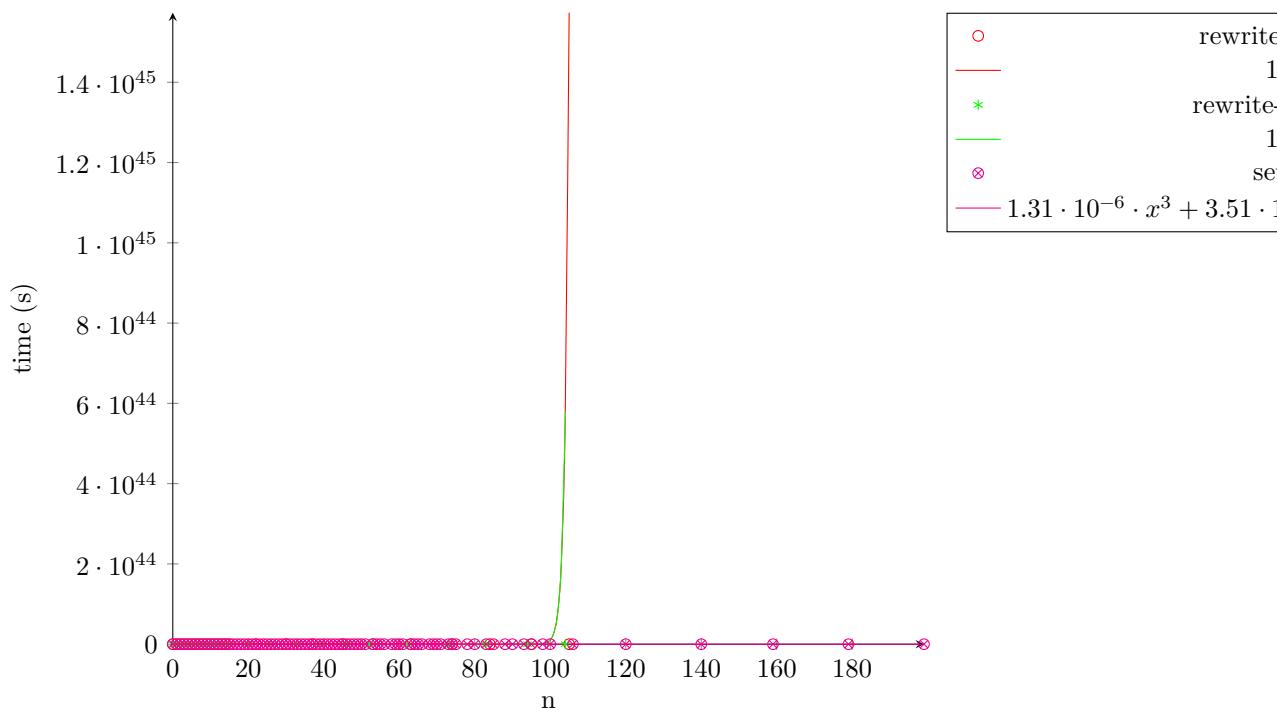


Figure 24: timing-rewrite-under-lets-plus-0

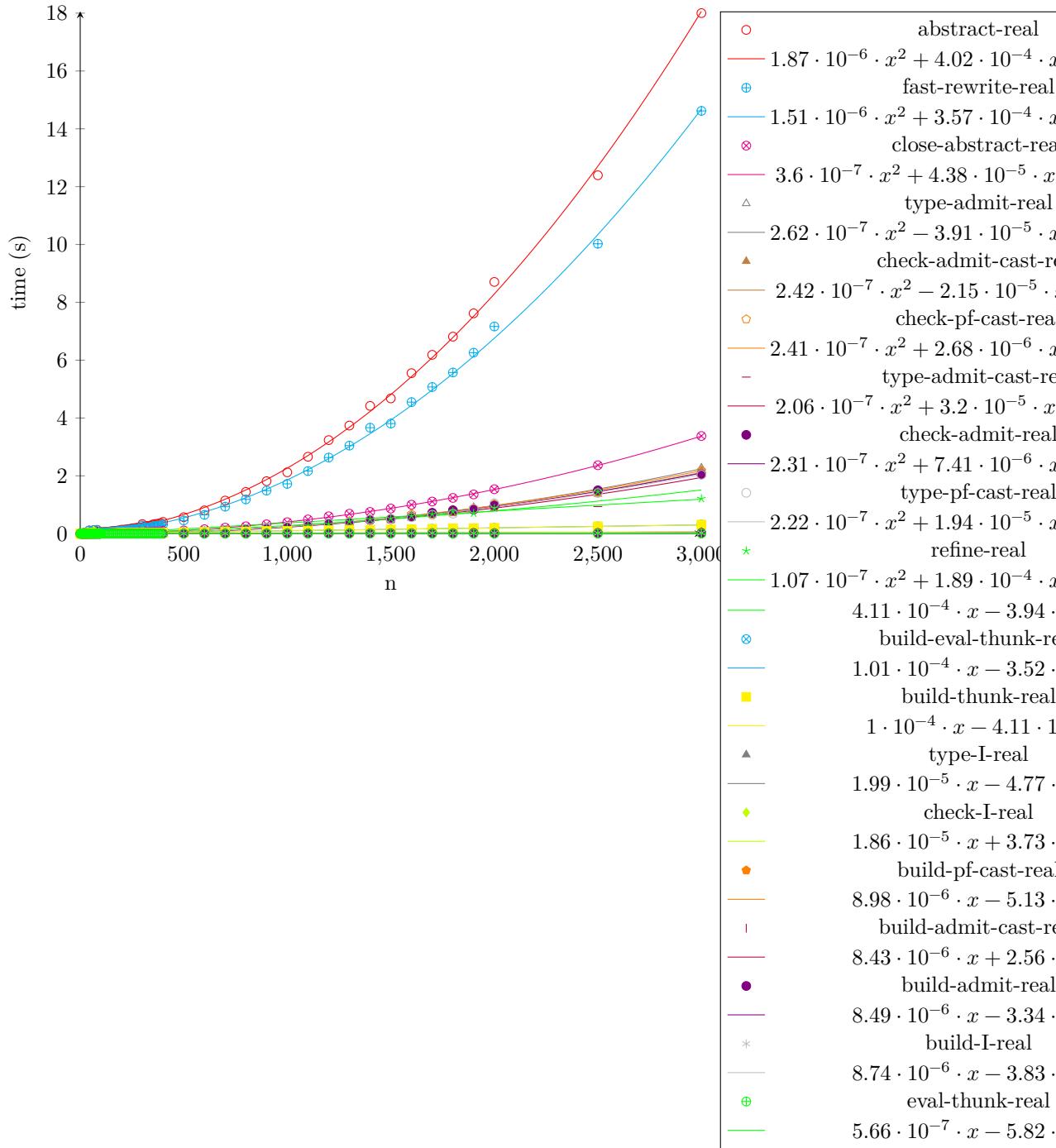


Figure 25: timing-rewrite-repeated-app-fast-rewrite-ltac2

