Conference Paper Title*

*Note: Sub-titles are not captured in Xplore and should not be used

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***Abstract*—This document is a model and instructions for LaTeX. This and the IEEEtran.cls file define the components of your paper [title, text, heads, etc.]. *CRITICAL: Do Not Use Symbols, Special Characters, Footnotes, or Math in Paper Title or Abstract.**

***Index Terms*—component, formatting, style, styling, insert**

I. Introduction

This document is a model and instructions for LaTeX. Please observe the conference page limits.

II. Ease of Use

A. Maintaining the Integrity of the Specifications

The IEEEtran class file is used to format your paper and style the text. All margins, column widths, line spaces, and text fonts are prescribed; please do not alter them. You may note peculiarities. For example, the head margin measures proportionately more than is customary. This measurement and others are deliberate, using specifications that anticipate your paper as one part of the entire proceedings, and not as an independent document. Please do not revise any of the current designations.

III. Prepare Your Paper Before Styling

Before you begin to format your paper, first write and save the content as a separate text file. Complete all content and organizational editing before formatting. Please note sections III-A–III-E below for more information on proofreading, spelling and grammar.

Keep your text and graphic files separate until after the text has been formatted and styled. Do not number text heads—LaTeX will do that for you.

A. Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, ac, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

Identify applicable funding agency here. If none, delete this.

B. Units

- Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as “3.5-inch disk drive”.
- Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.
- Do not mix complete spellings and abbreviations of units: “Wb/m^2” or “webers per square meter”, not “webers/m^2”. Spell out units when they appear in text: “. . . a few henries”, not “. . . a few H”.
- Use a zero before decimal points: “0.25”, not “.25”. Use “cm^3”, not “cc”.)

C. Equations

Number equations consecutively. To make your equations more compact, you may use the solidus (/), the exp function, or appropriate exponents. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use a long dash rather than a hyphen for a minus sign. Punctuate equations with commas or periods when they are part of a sentence, as in:

$$a + b = \gamma \tag{1}$$

Be sure that the symbols in your equation have been defined before or immediately following the equation. Use “(1)”, not “Eq. (1)” or “equation (1)”, except at the beginning of a sentence: “Equation (1) is . . .”

D. LaTeX-Specific Advice

Please use “soft” (e.g., `\eqref{Eq}`) cross references instead of “hard” references (e.g., `(1)`). That will make it possible to combine sections, add equations, or change the order of figures or citations without having to go through the file line by line.

Please don’t use the `{eqnarray}` equation environment. Use `{align}` or `{IEEEeqnarray}` instead. The {eqnarray} environment leaves unsightly spaces around relation symbols.

Please note that the {subequations} environment in LaTeX will increment the main equation counter even when there are no equation numbers displayed. If you forget that, you might write an article in which the equation numbers skip from (17) to (20), causing the copy editors to wonder if you've discovered a new method of counting.

BibTeX does not work by magic. It doesn't get the bibliographic data from thin air but from .bib files. If you use BibTeX to produce a bibliography you must send the .bib files.

LaTeX can't read your mind. If you assign the same label to a subsubsection and a table, you might find that Table I has been cross referenced as Table IV-B3.

LaTeX does not have precognitive abilities. If you put a \label command before the command that updates the counter it's supposed to be using, the label will pick up the last counter to be cross referenced instead. In particular, a \label command should not go before the caption of a figure or a table.

Do not use \nonumber inside the {array} environment. It will not stop equation numbers inside {array} (there won't be any anyway) and it might stop a wanted equation number in the surrounding equation.

E. Some Common Mistakes

- The word "data" is plural, not singular.
- The subscript for the permeability of vacuum μ_0, and other common scientific constants, is zero with subscript formatting, not a lowercase letter "o".
- In American English, commas, semicolons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
- A graph within a graph is an "inset", not an "insert". The word alternatively is preferred to the word "alternately" (unless you really mean something that alternates).
- Do not use the word "essentially" to mean "approximately" or "effectively".
- In your paper title, if the words "that uses" can accurately replace the word "using", capitalize the "u"; if not, keep using lower-cased.
- Be aware of the different meanings of the homophones "affect" and "effect", "complement" and "compliment", "discreet" and "discrete", "principal" and "principle".
- Do not confuse "imply" and "infer".
- The prefix "non" is not a word; it should be joined to the word it modifies, usually without a hyphen.
- There is no period after the "et" in the Latin abbreviation "et al.".
- The abbreviation "i.e." means "that is", and the abbreviation "e.g." means "for example".

An excellent style manual for science writers is [7].

F. Authors and Affiliations

The class file is designed for, but not limited to, six authors. A minimum of one author is required for all conference articles. Author names should be listed starting from left to right and then moving down to the next line. This is the author sequence that will be used in future citations and by indexing services. Names should not be listed in columns nor group by affiliation. Please keep your affiliations as succinct as possible (for example, do not differentiate among departments of the same organization).

G. Identify the Headings

Headings, or heads, are organizational devices that guide the reader through your paper. There are two types: component heads and text heads.

Component heads identify the different components of your paper and are not topically subordinate to each other. Examples include Acknowledgments and References and, for these, the correct style to use is "Heading 5". Use "figure caption" for your Figure captions, and "table head" for your table title. Run-in heads, such as "Abstract", will require you to apply a style (in this case, italic) in addition to the style provided by the drop down menu to differentiate the head from the text.

Text heads organize the topics on a relational, hierarchical basis. For example, the paper title is the primary text head because all subsequent material relates and elaborates on this one topic. If there are two or more sub-topics, the next level head (uppercase Roman numerals) should be used and, conversely, if there are not at least two sub-topics, then no subheads should be introduced.

H. Figures and Tables

a) Positioning Figures and Tables: Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be below the figures; table heads should appear above the tables. Insert figures and tables after they are cited in the text. Use the abbreviation "Fig. 1", even at the beginning of a sentence.

TABLE I: Table Type Styles

Table Head	**Table Column Head**		
	Table column subhead	***Subhead***	***Subhead***
copy	More table copy[a]		

[a]Sample of a Table footnote.

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an example, write the quantity "Magnetization", or "Magnetization, M", not just "M". If including units in the label, present

Fig. 1: Example of a figure caption.

them within parentheses. Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization {A[m(1)]}”, not just “A/m”. Do not label axes with a ratio of quantities and units. For example, write “Temperature (K)”, not “Temperature/K”.

ACKNOWLEDGMENT

The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g”. Avoid the stilted expression “one of us (R. B. G.) thanks ...”. Instead, try “R. B. G. thanks...”. Put sponsor acknowledgments in the unnumbered footnote on the first page.

REFERENCES

Please number citations consecutively within brackets [1]. The sentence punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]—do not use “Ref. [3]” or “reference [3]” except at the beginning of a sentence: “Reference [3] was the first ...”

Number footnotes separately in superscripts. Place the actual footnote at the bottom of the column in which it was cited. Do not put footnotes in the abstract or reference list. Use letters for table footnotes.

Unless there are six authors or more give all authors’ names; do not use “et al.”. Papers that have not been published, even if they have been submitted for publication, should be cited as “unpublished” [4]. Papers that have been accepted for publication should be cited as “in press” [5]. Capitalize only the first word in a paper title, except for proper nouns and element symbols.

For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation [6].

delivery-failure-ratelatency-walltime-inlet-ns

delivery-failure-ratelatency-simsteps-outlet

delivery-failure-ratelatency-walltime-outlet-ns

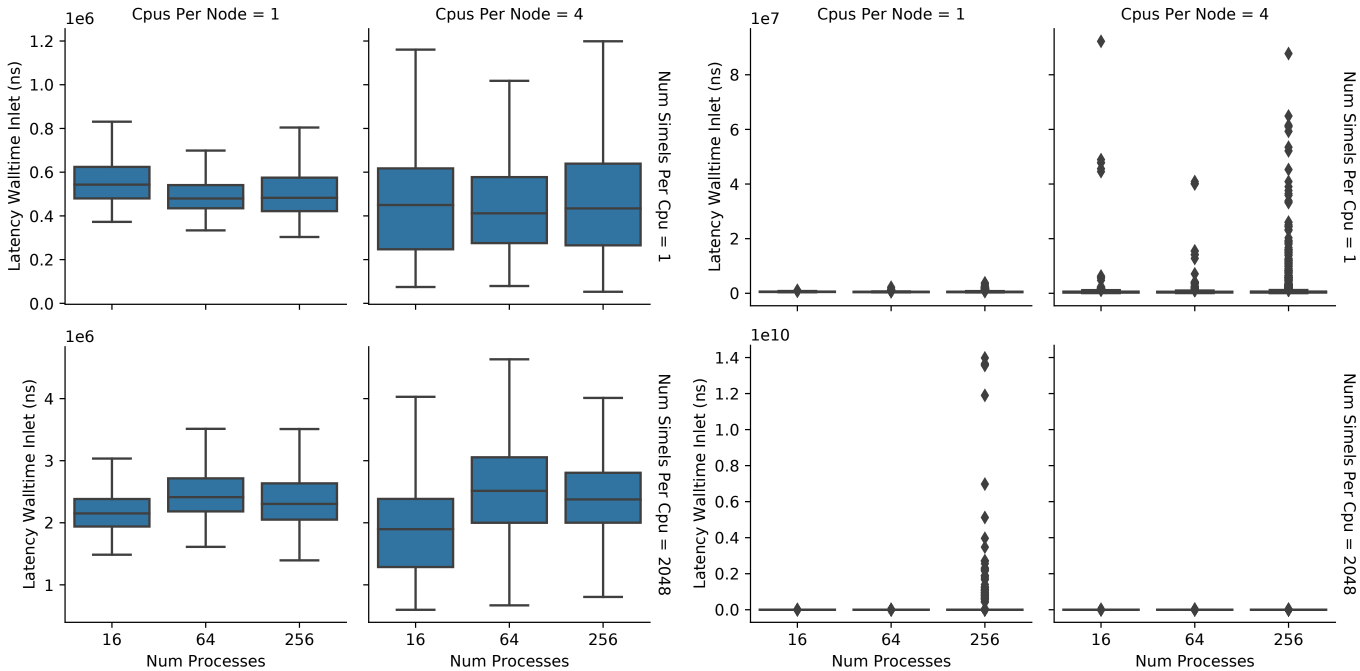
delivery-failure-ratedelivery-clumpiness

delivery-failure-ratesimstep-period-inlet-ns

delivery-failure-ratelatency-simsteps-inlet

delivery-failure-ratesimstep-period-outlet-ns

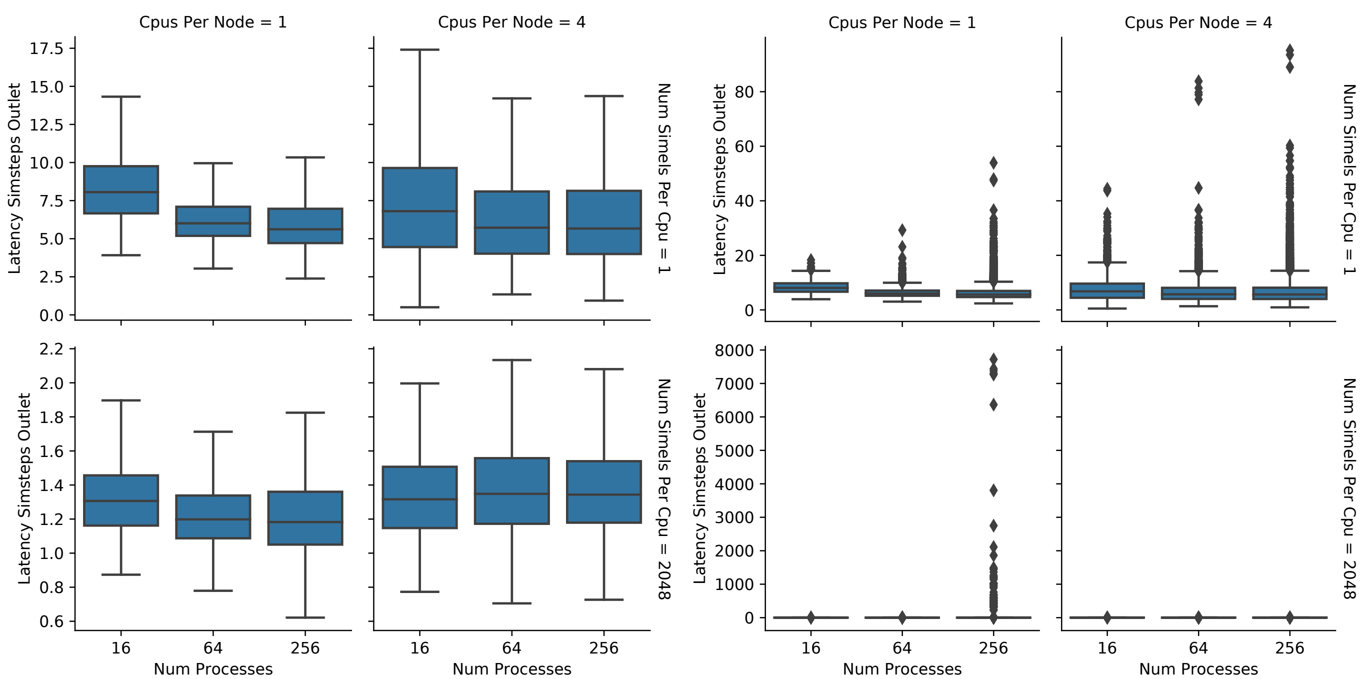
delivery-failure-ratedelivery-failure-rate



(a) TODO without outliers

(b) TODO without outliers

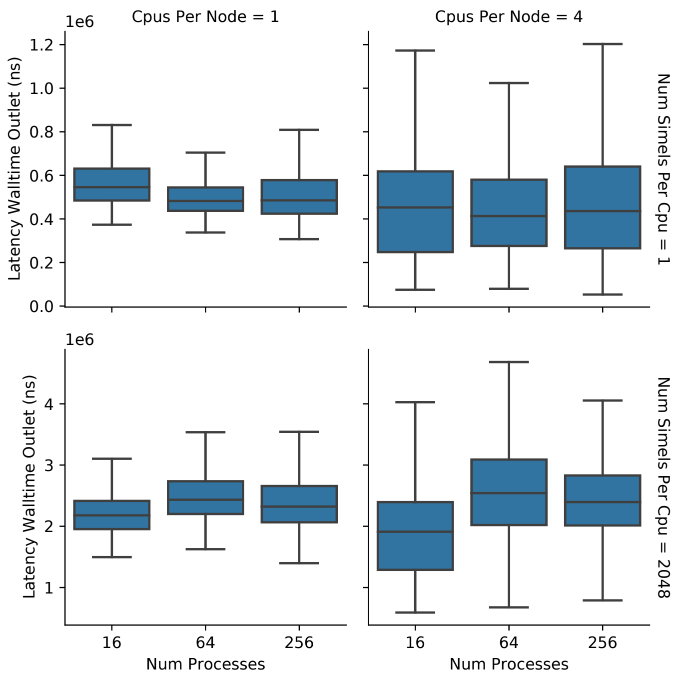
Fig. 2: weak scaling Latency Walltime Inlet (ns) TODO



(a) TODO without outliers

(b) TODO without outliers

Fig. 3: weak scaling Latency Simsteps Outlet TODO



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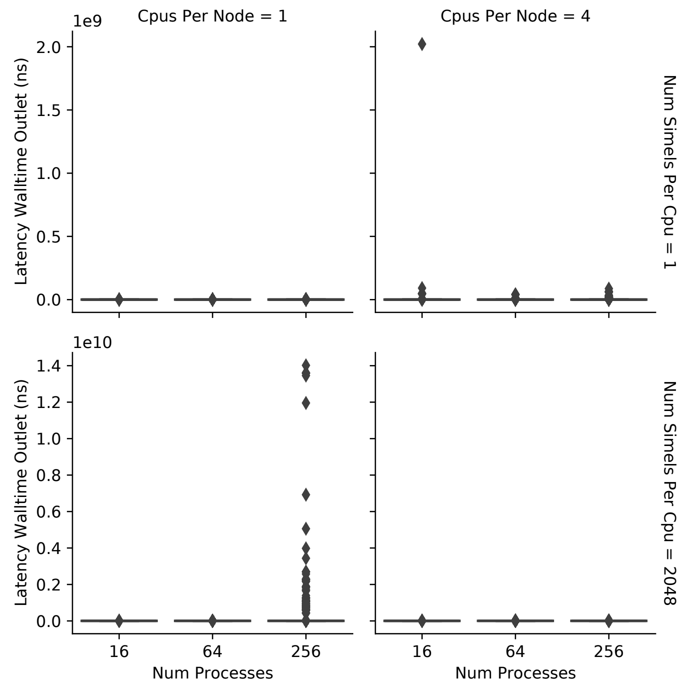
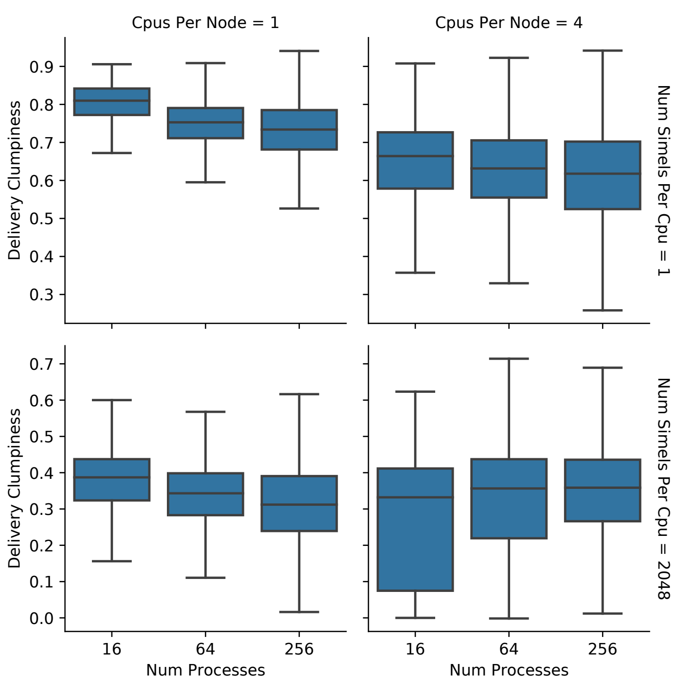


(b) TODO without outliers

Fig. 4: weak scaling Latency Walltime Outlet (ns) TODO



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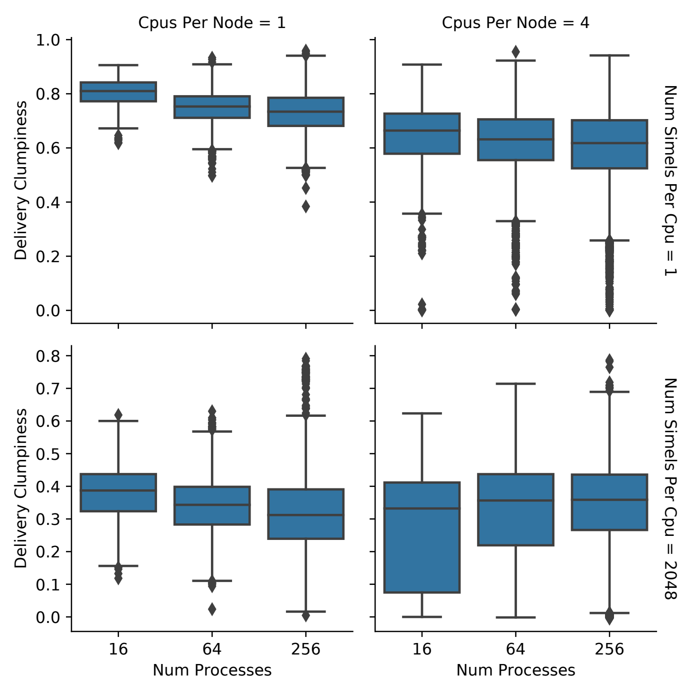
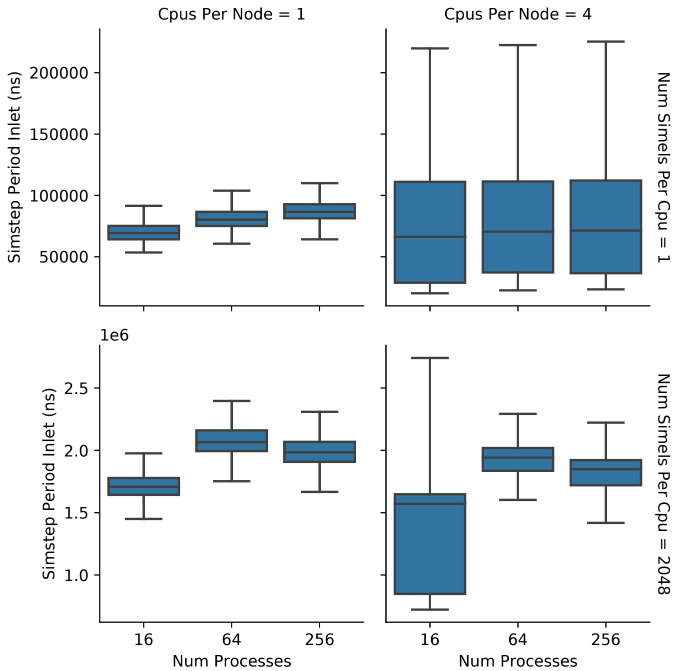


(b) TODO without outliers

Fig. 5: weak scaling Delivery Clumpiness TODO



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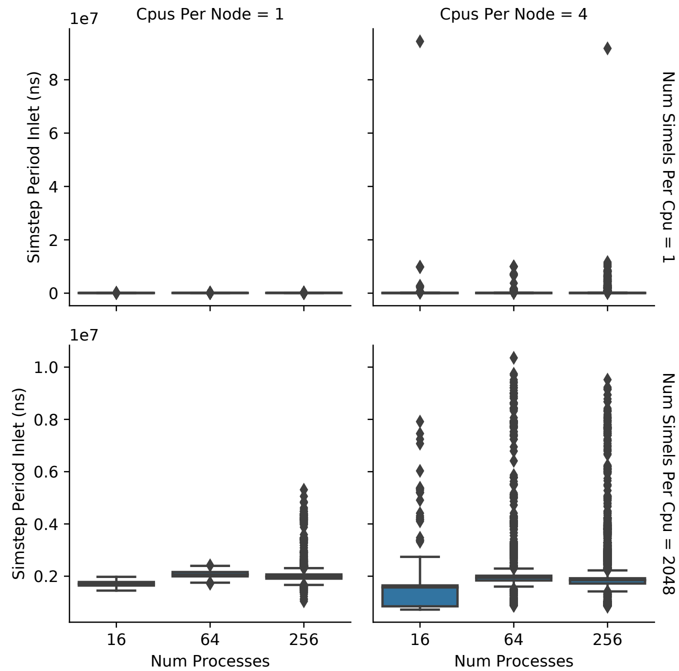
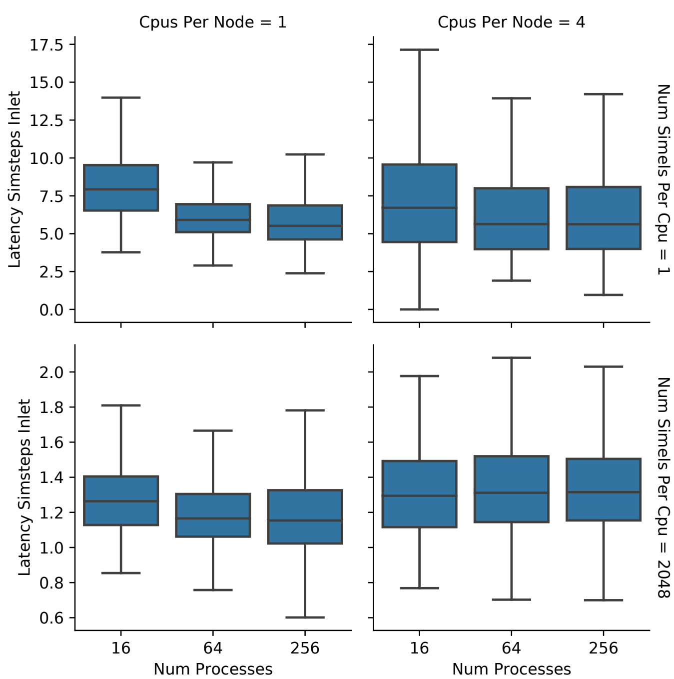


(b) TODO without outliers

Fig. 6: weak scaling Simstep Period Inlet (ns) TODO



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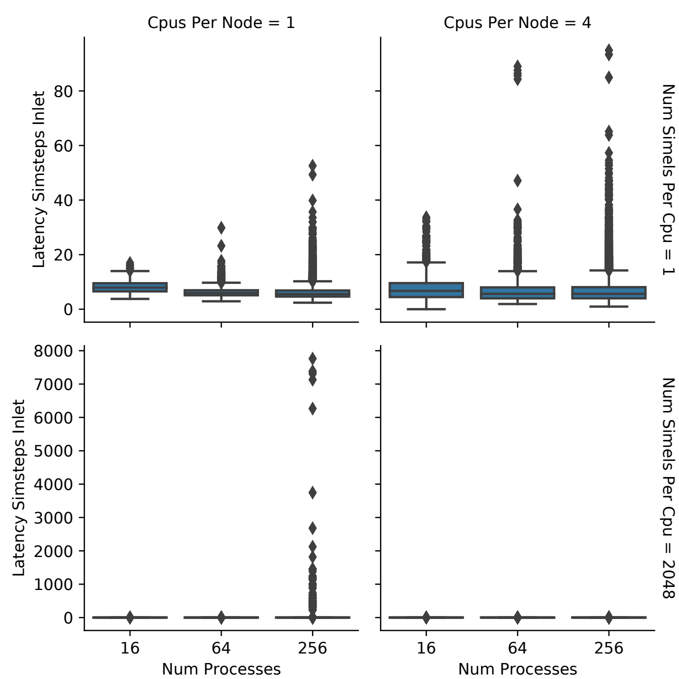
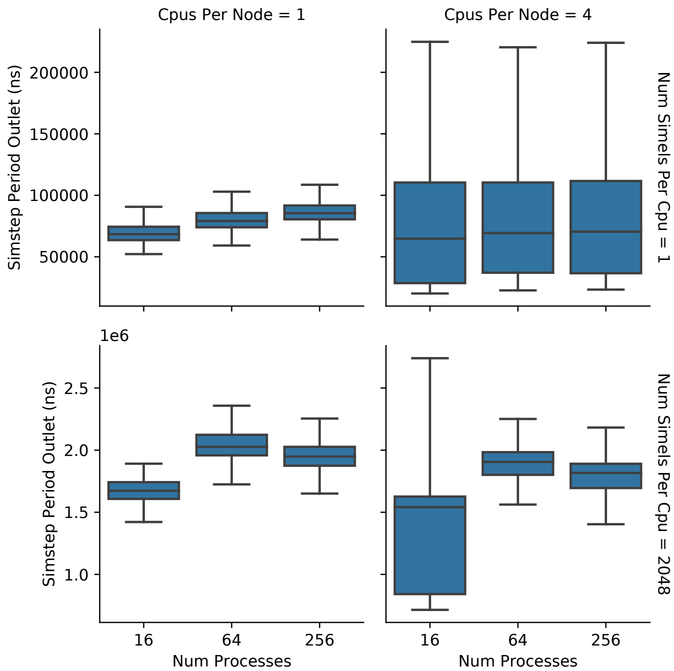


(b) TODO without outliers

Fig. 7: weak scaling Latency Simsteps Inlet TODO



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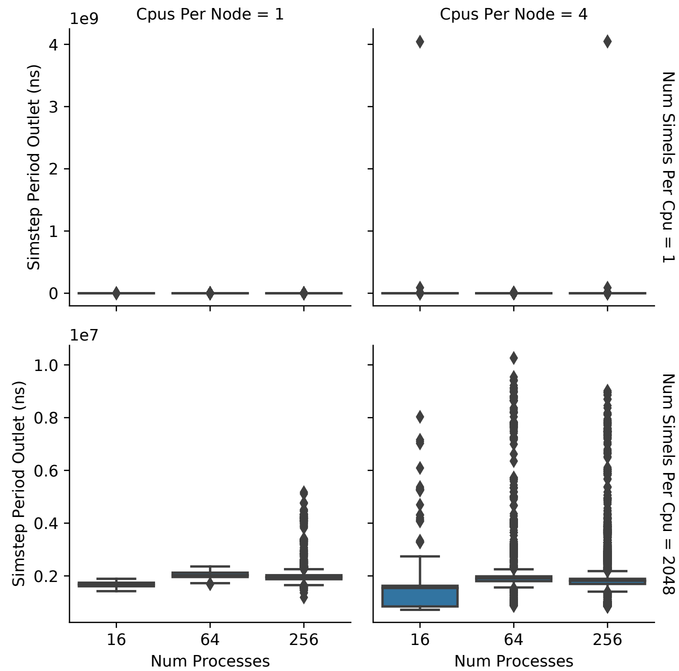
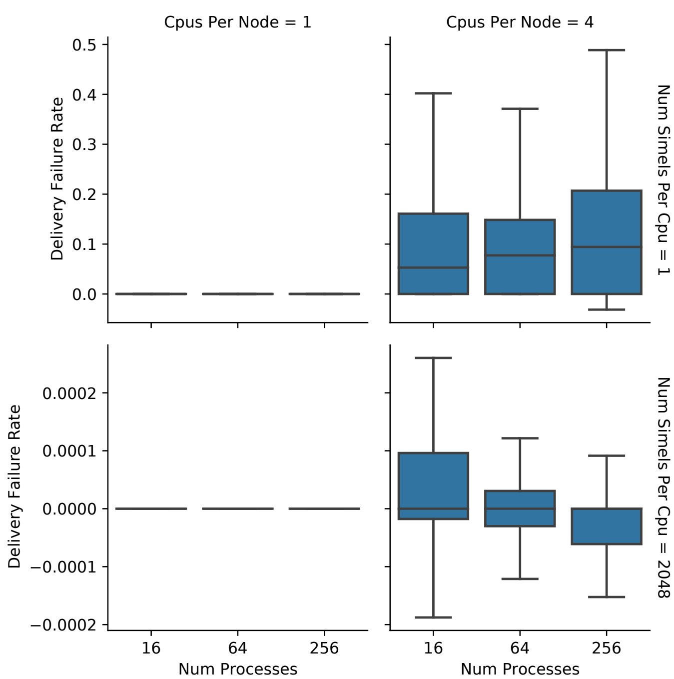
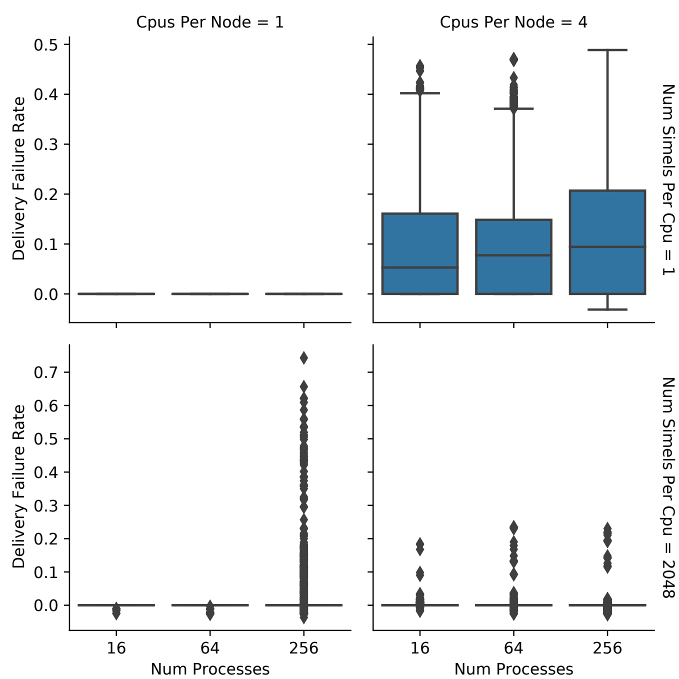


(b) TODO without outliers

Fig. 8: weak scaling Simstep Period Outlet (ns) TODO

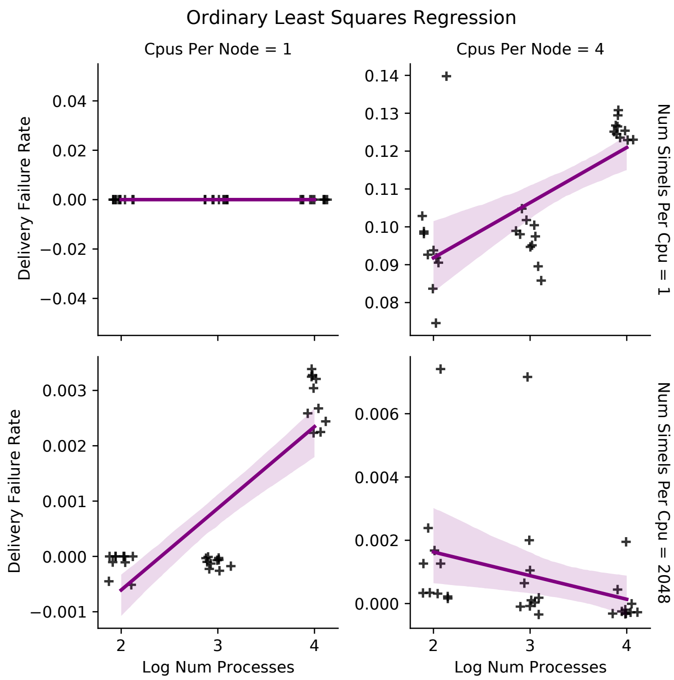


(a) TODO without outliers

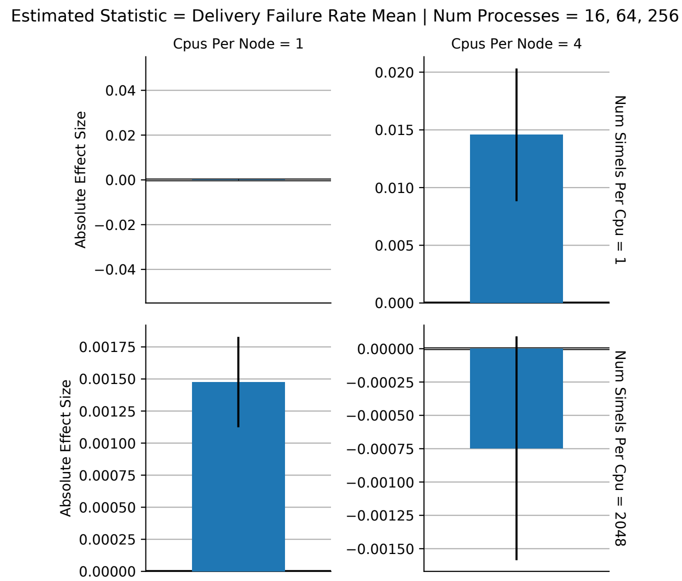


(b) TODO without outliers

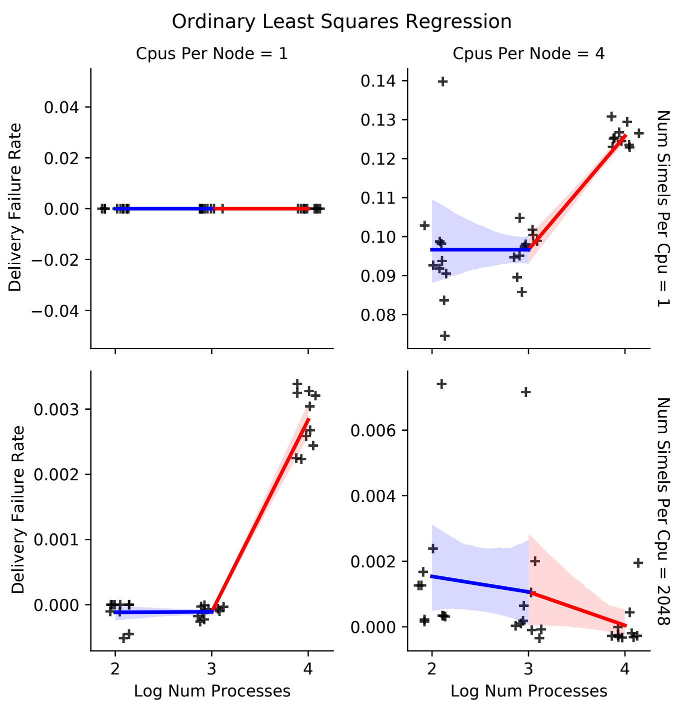
Fig. 9: weak scaling Delivery Failure Rate TODO



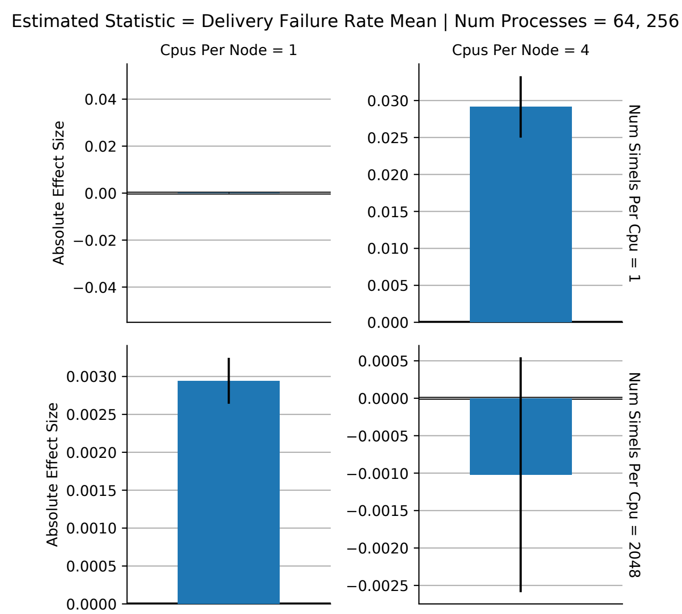
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

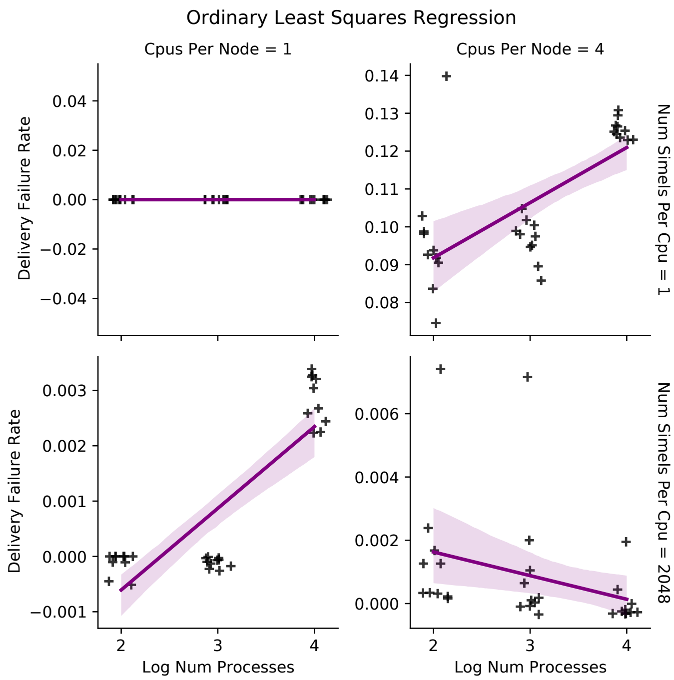


(c) TODO partial regression

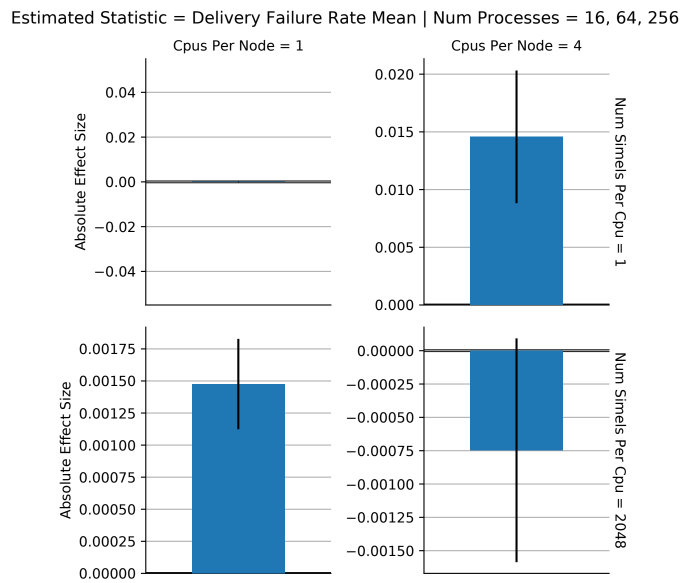


(d) TODO partial regression effect size

Fig. 10: weak scaling Latency Walltime Inlet (ns) ordinary least squares regression to estimate mean



(a) TODO complete ordinary regression



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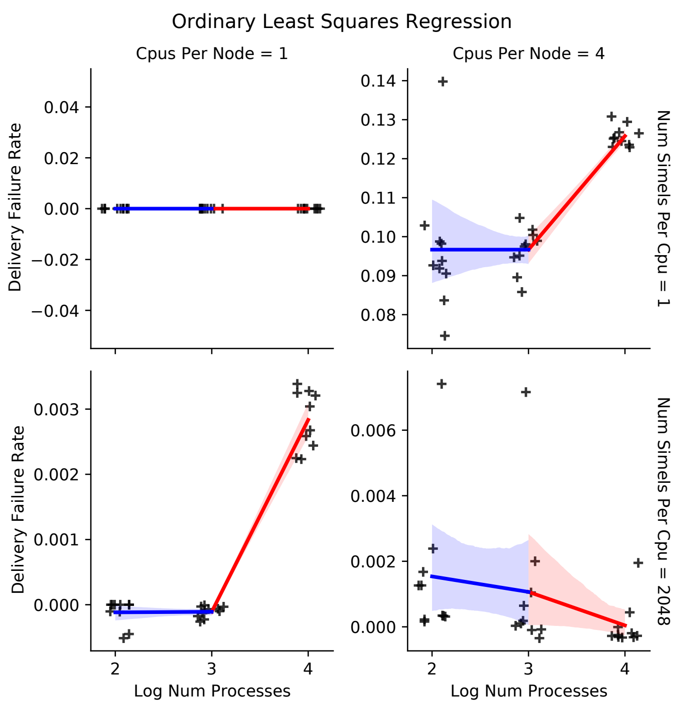
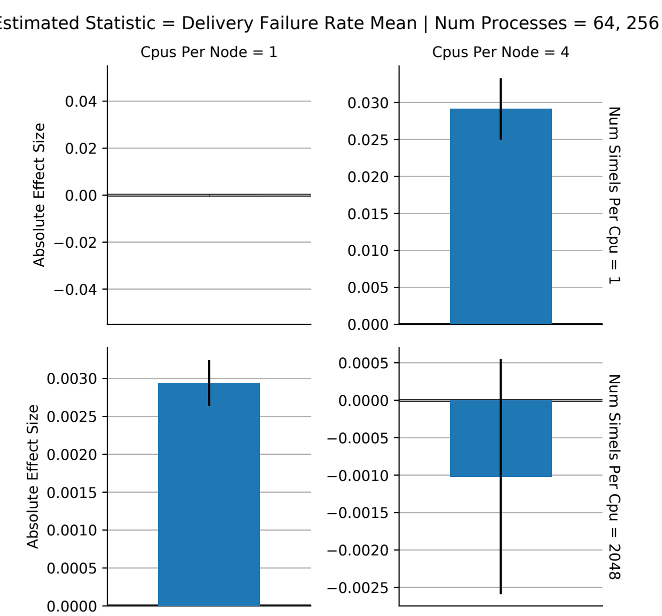
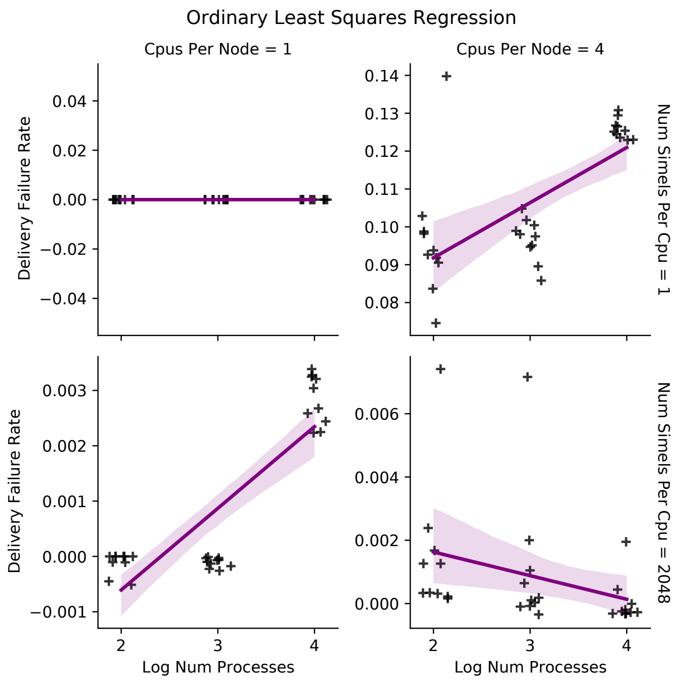


(c) TODO partial regression

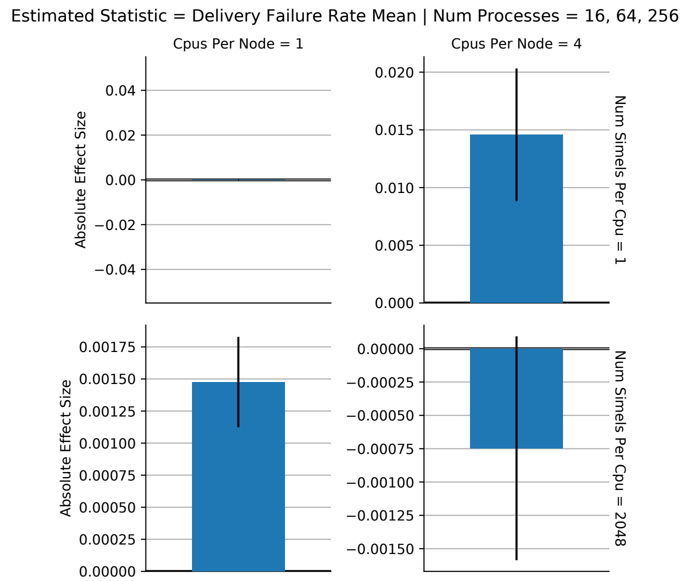


(d) TODO partial regression effect size

Fig. 11: weak scaling Latency Simsteps Outlet ordinary least squares regression to estimate mean



(a) TODO complete ordinary regression



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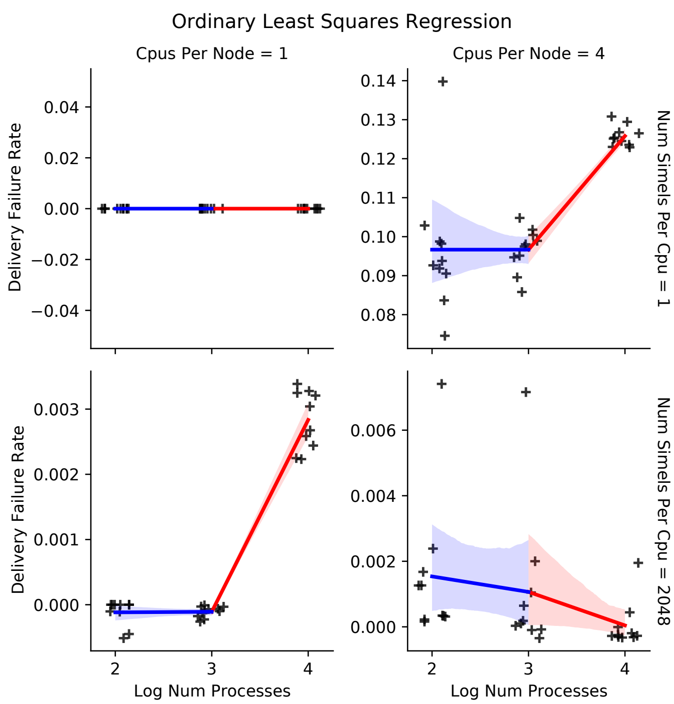
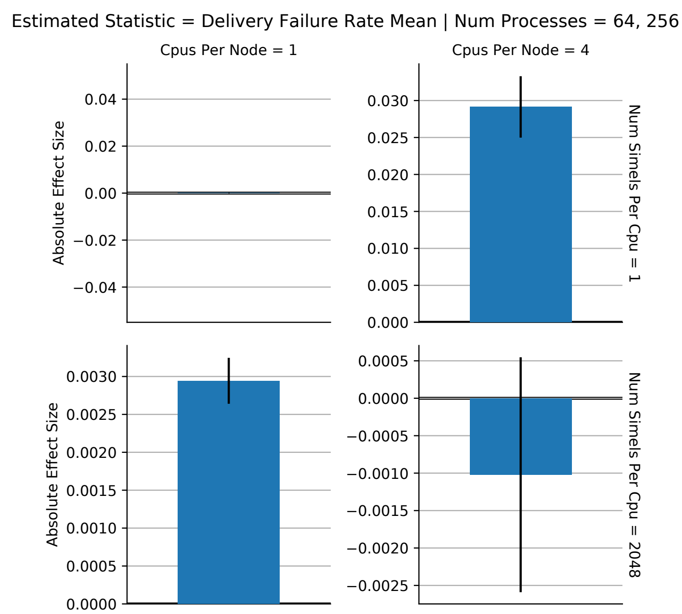
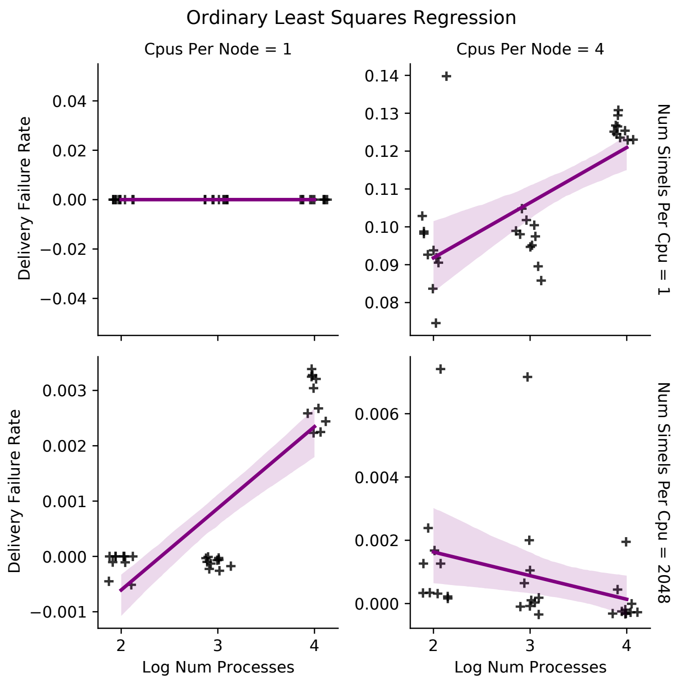


(c) TODO partial regression

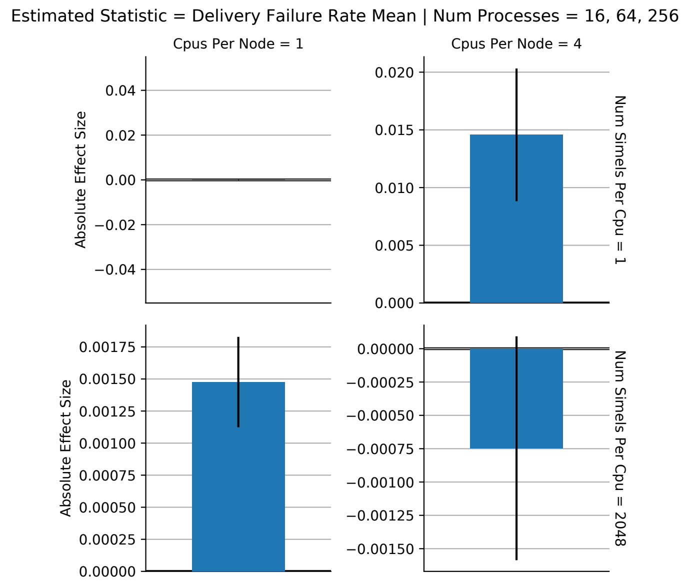


(d) TODO partial regression effect size

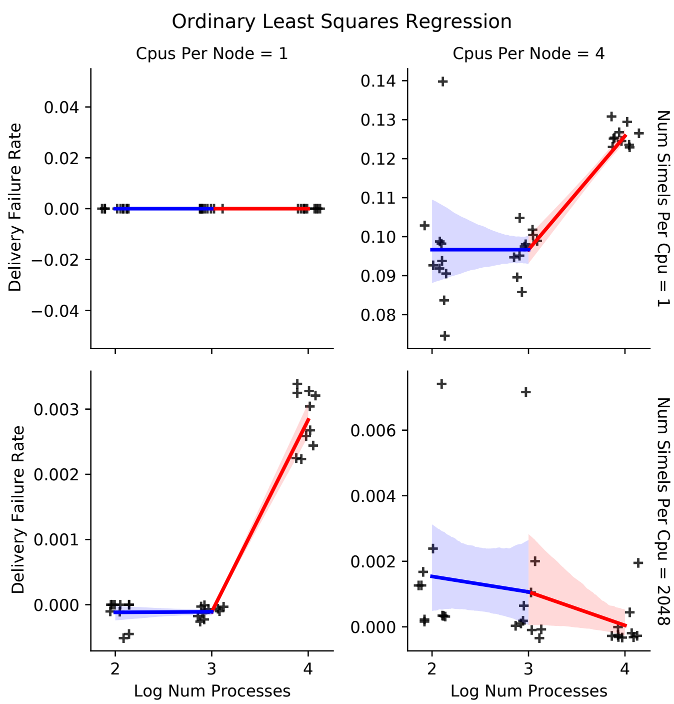
Fig. 12: weak scaling Latency Walltime Outlet (ns) ordinary least squares regression to estimate mean



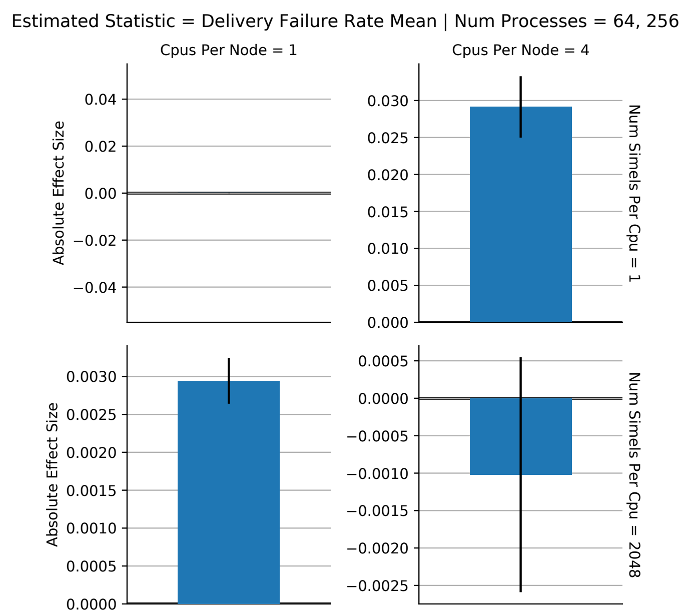
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

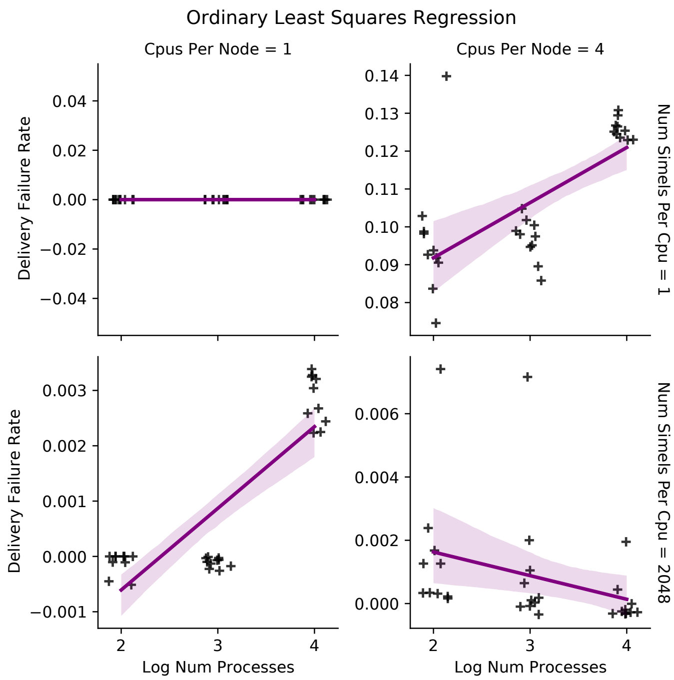


(c) TODO partial regression

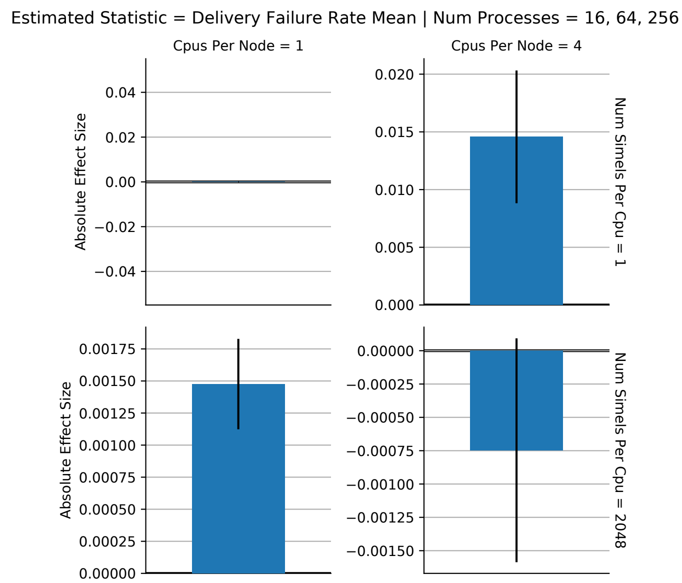


(d) TODO partial regression effect size

Fig. 13: weak scaling Delivery Clumpiness ordinary least squares regression to estimate mean



(a) TODO complete ordinary regression



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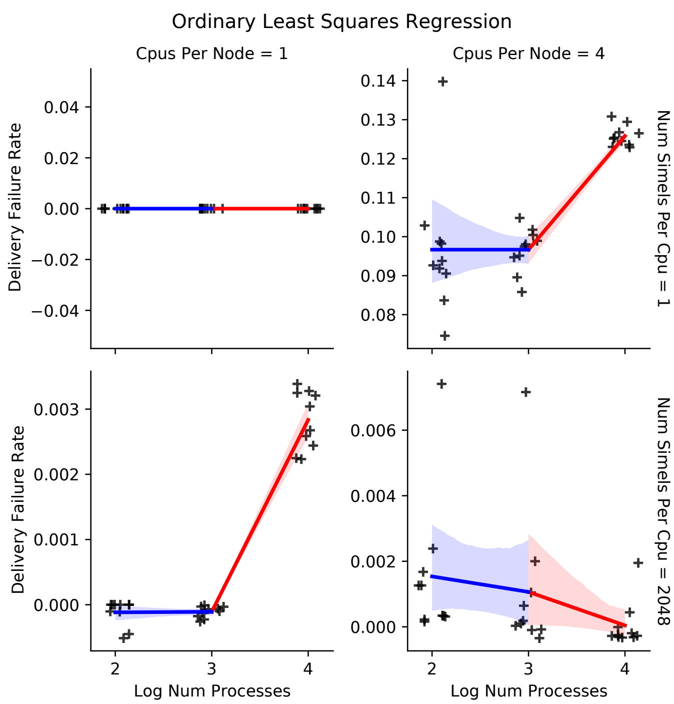
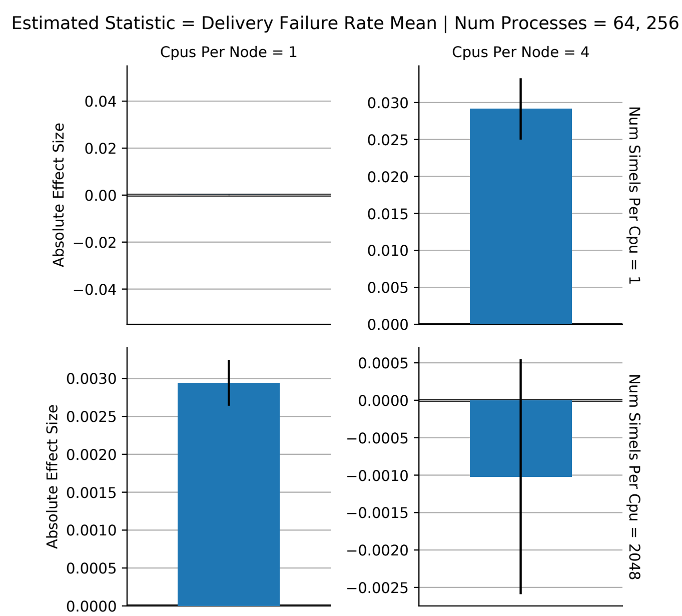
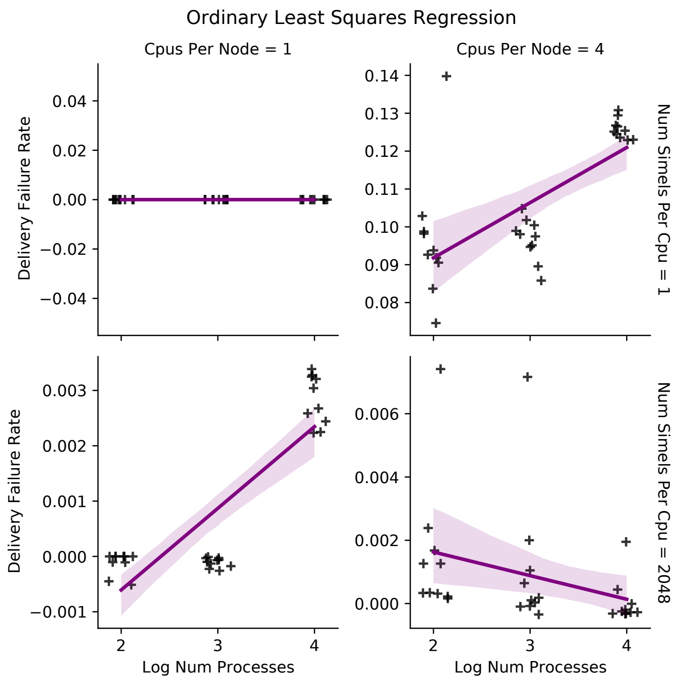


(c) TODO partial regression

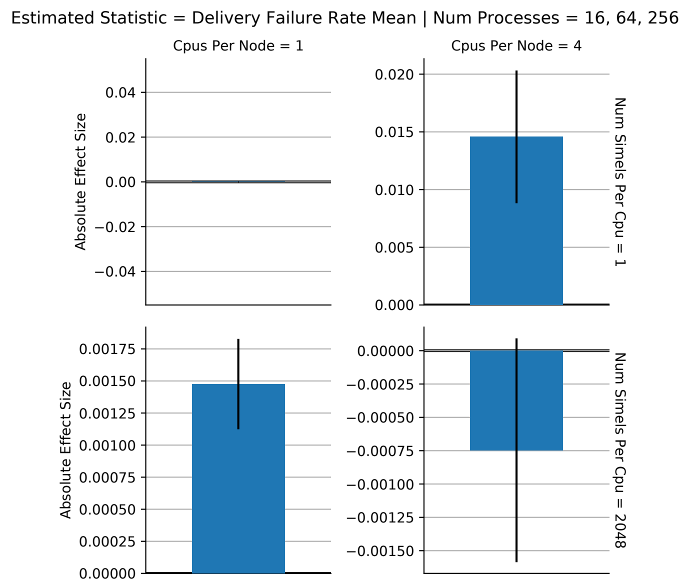


(d) TODO partial regression effect size

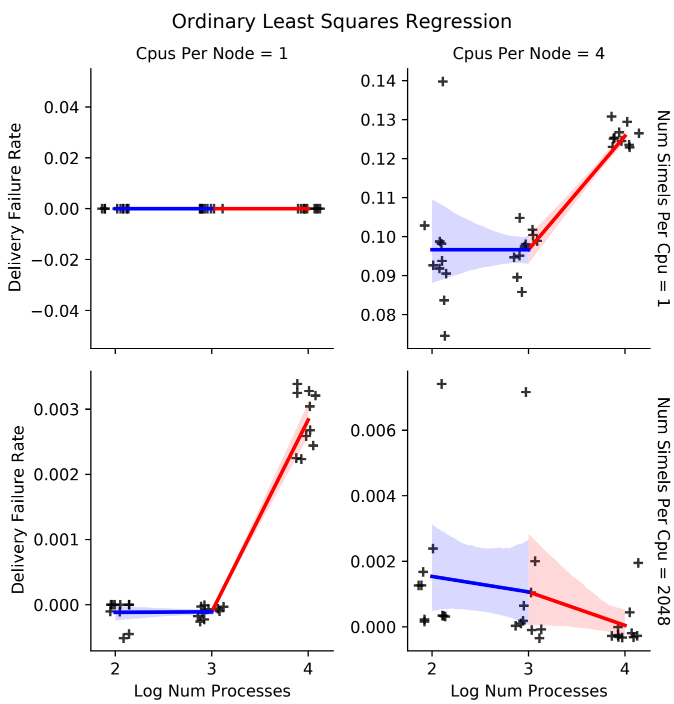
Fig. 14: weak scaling Simstep Period Inlet (ns) ordinary least squares regression to estimate mean



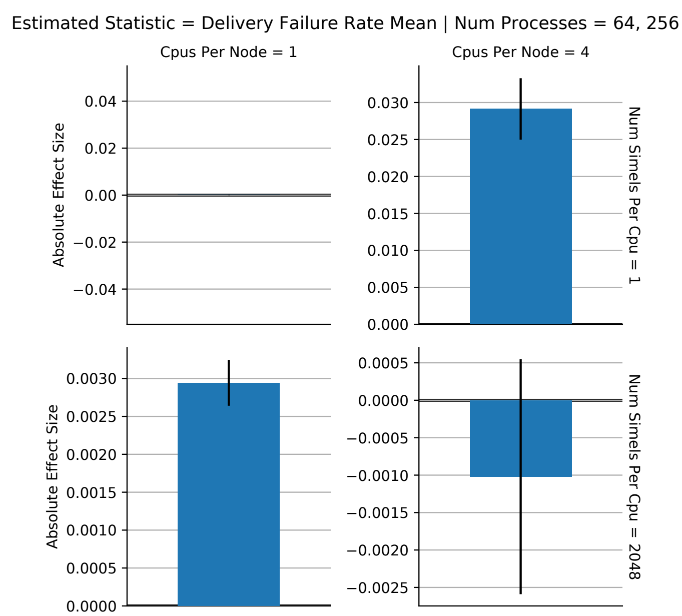
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

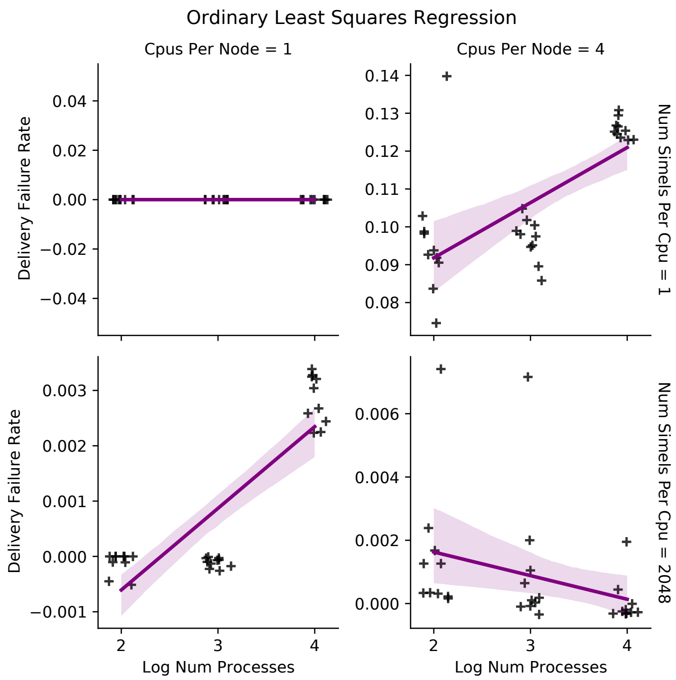


(c) TODO partial regression

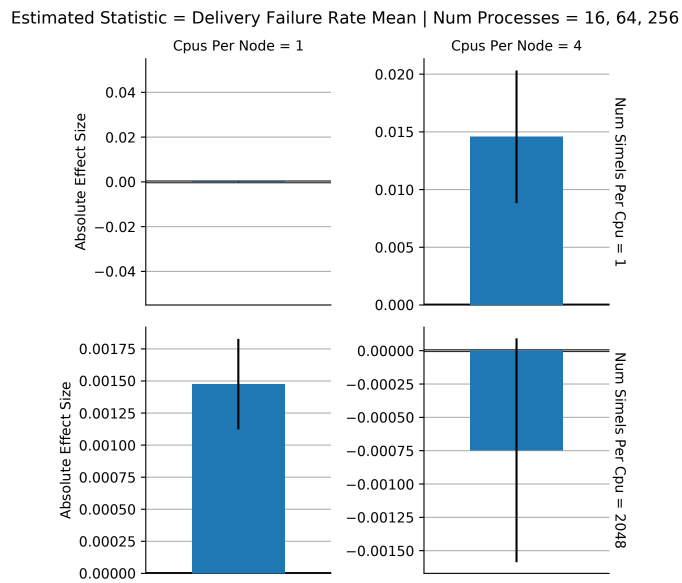


(d) TODO partial regression effect size

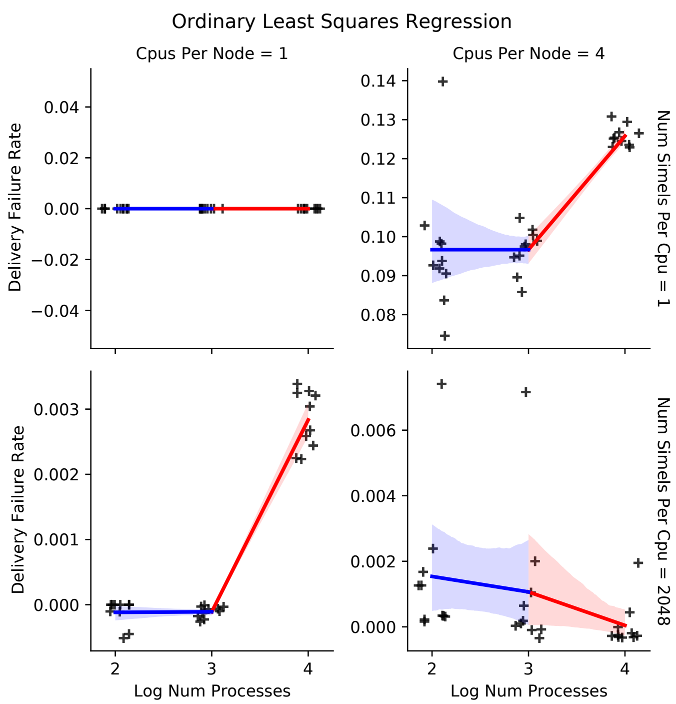
Fig. 15: weak scaling Latency Simsteps Inlet ordinary least squares regression to estimate mean



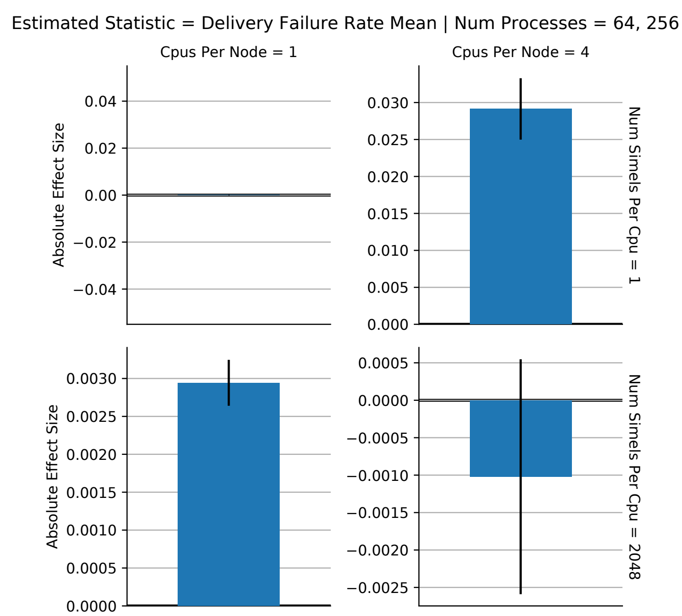
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

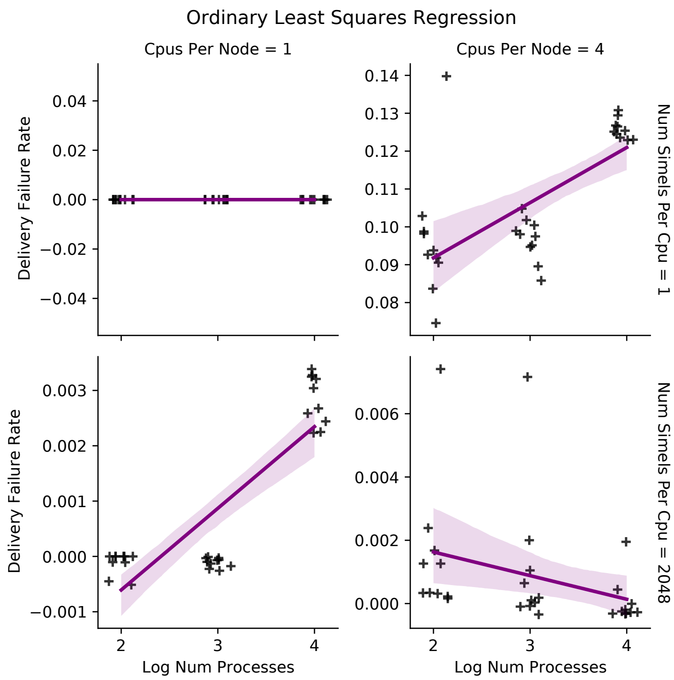


(c) TODO partial regression

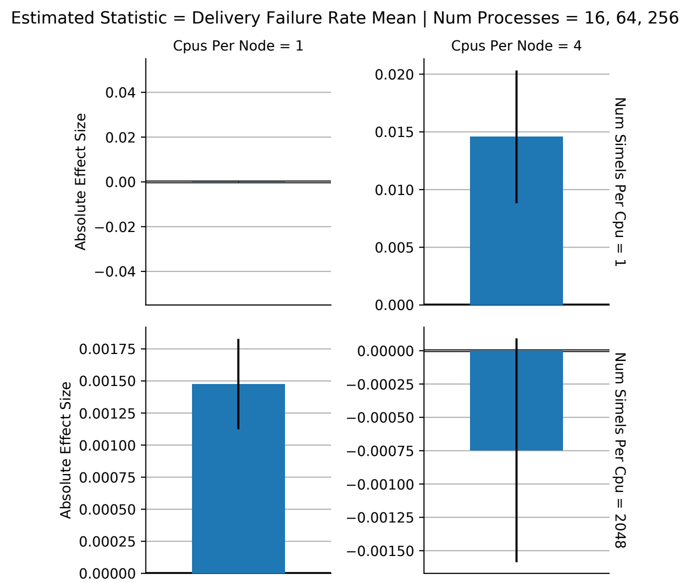


(d) TODO partial regression effect size

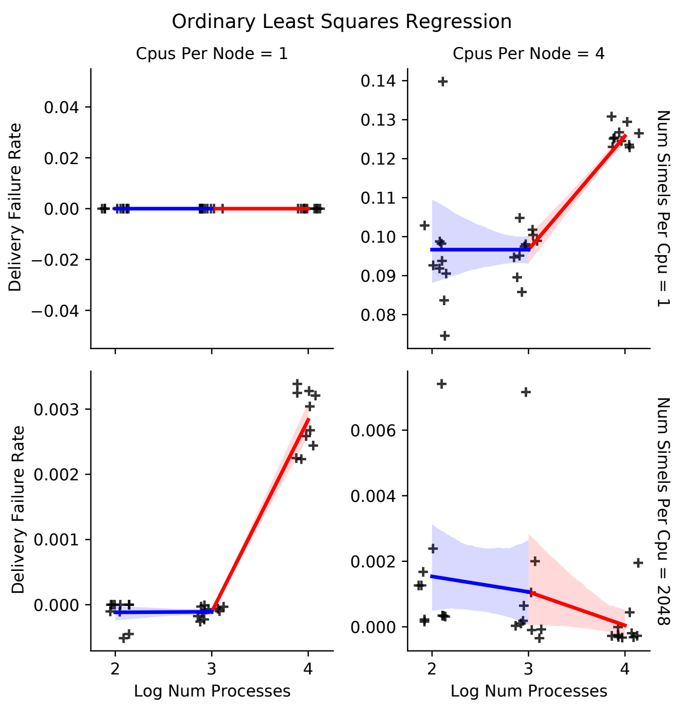
Fig. 16: weak scaling   Simstep Period Outlet (ns)   ordinary least squares regression to estimate mean



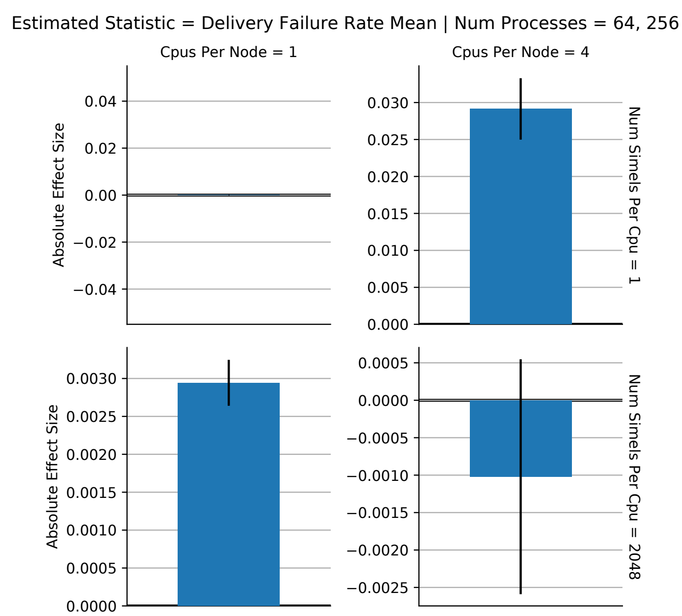
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

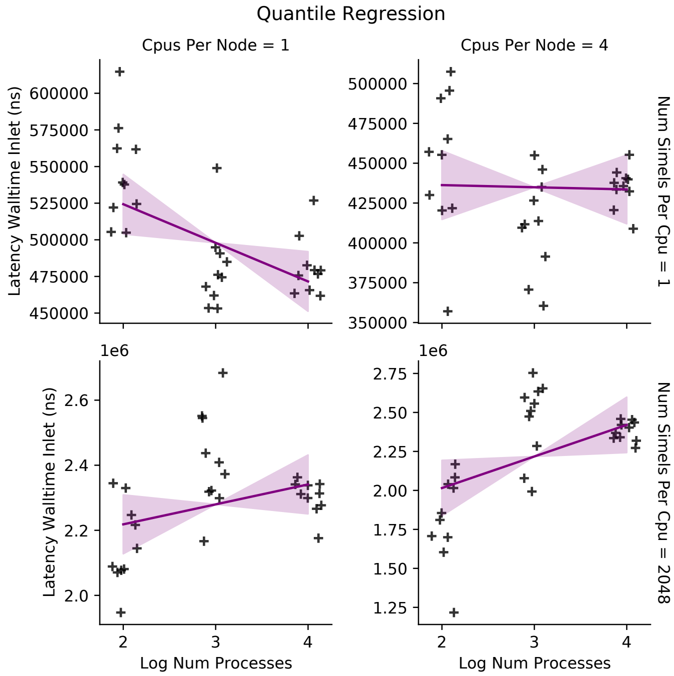


(c) TODO partial regression

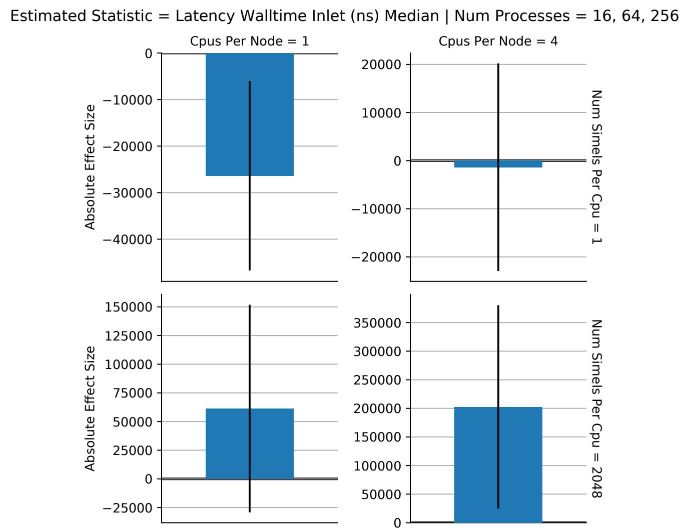


(d) TODO partial regression effect size

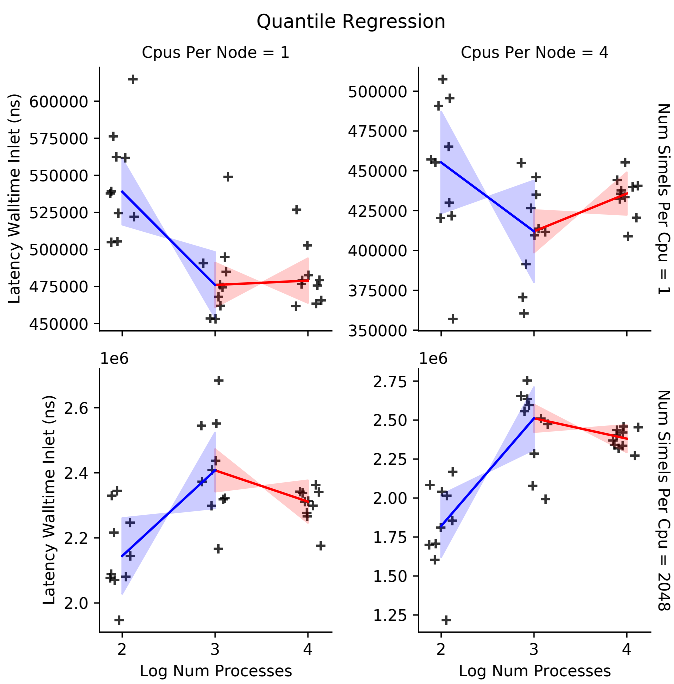
Fig. 17: weak scaling Delivery Failure Rate ordinary least squares regression to estimate mean



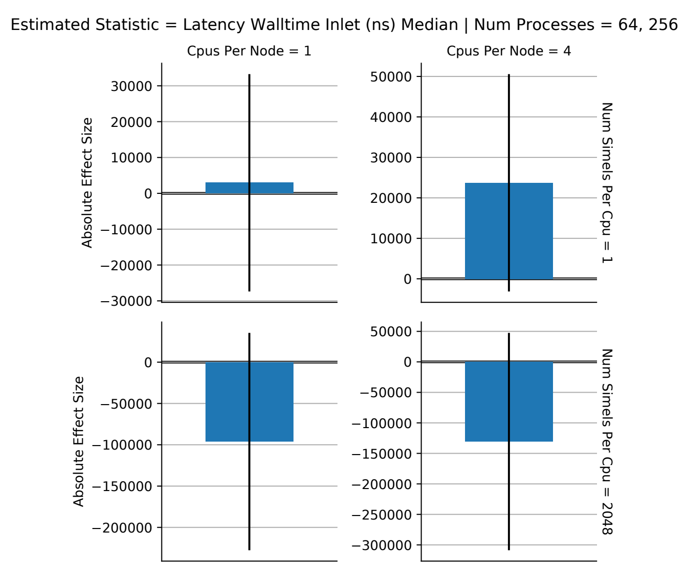
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

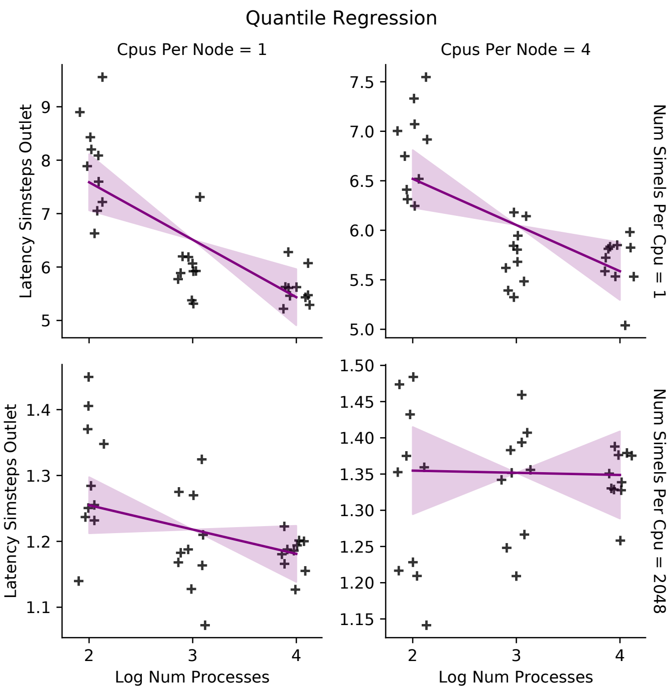


(c) TODO partial regression

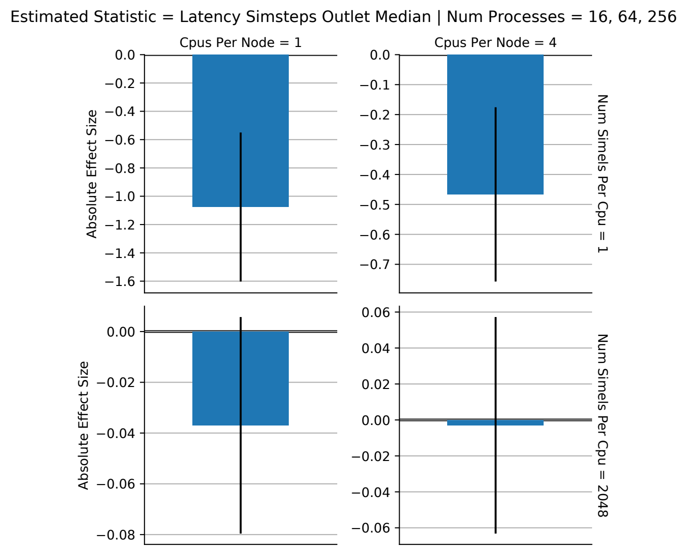


(d) TODO partial regression effect size

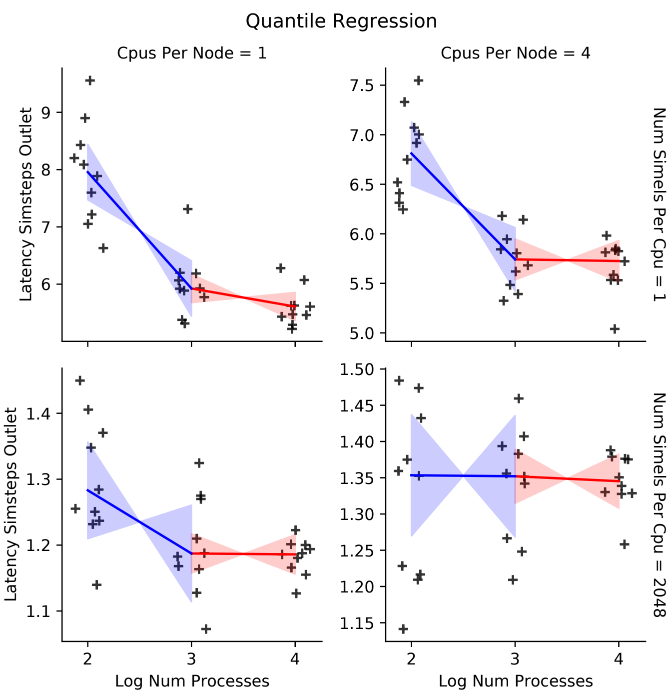
Fig. 18: weak scaling Latency Walltime Inlet (ns) quantile regression to estimate median



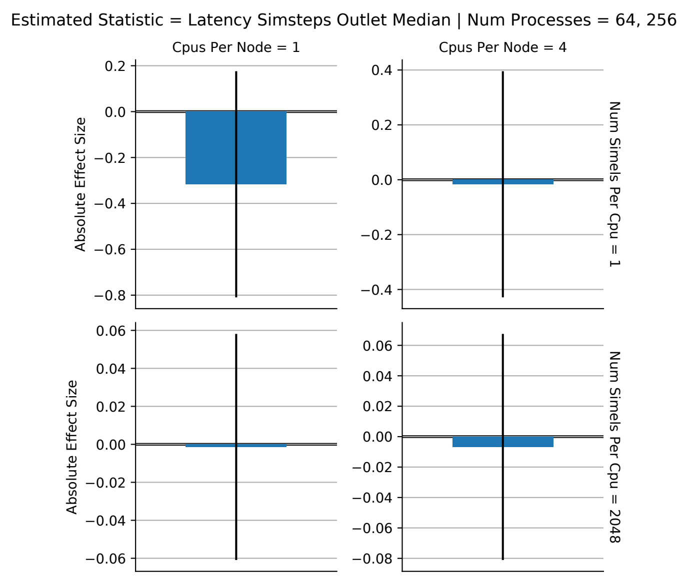
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

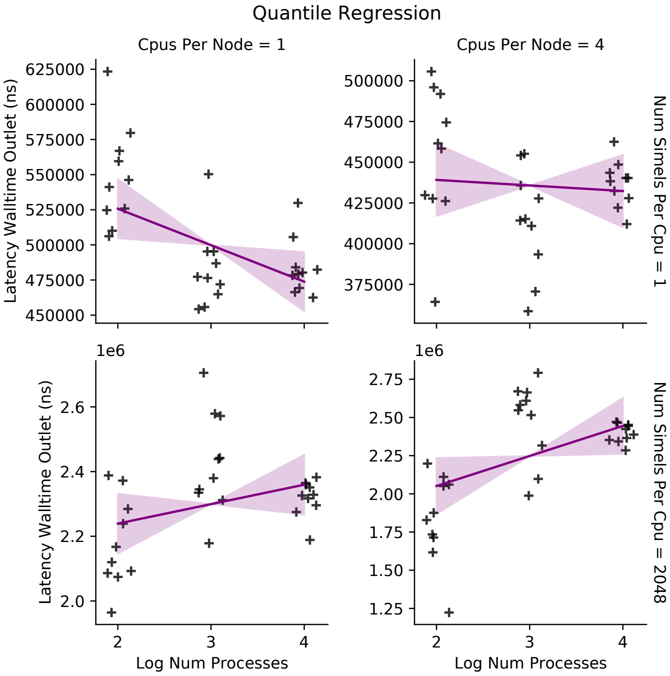


(c) TODO partial regression

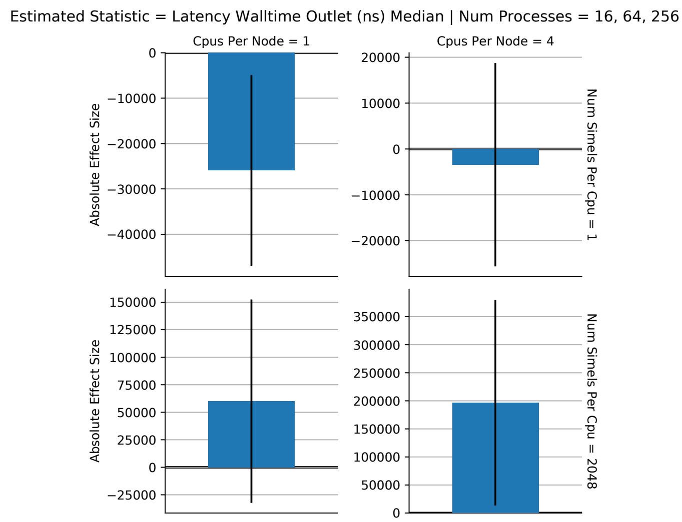


(d) TODO partial regression effect size

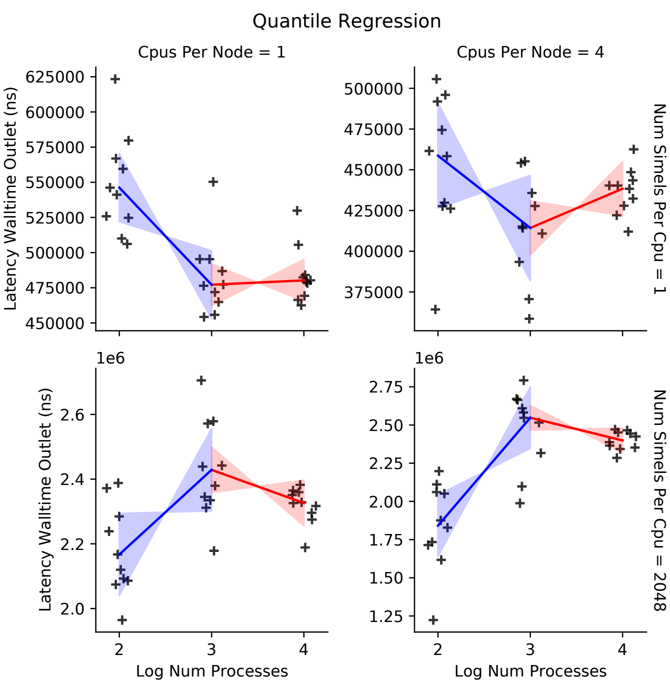
Fig. 19: weak scaling Latency Simsteps Outlet quantile regression to estimate median



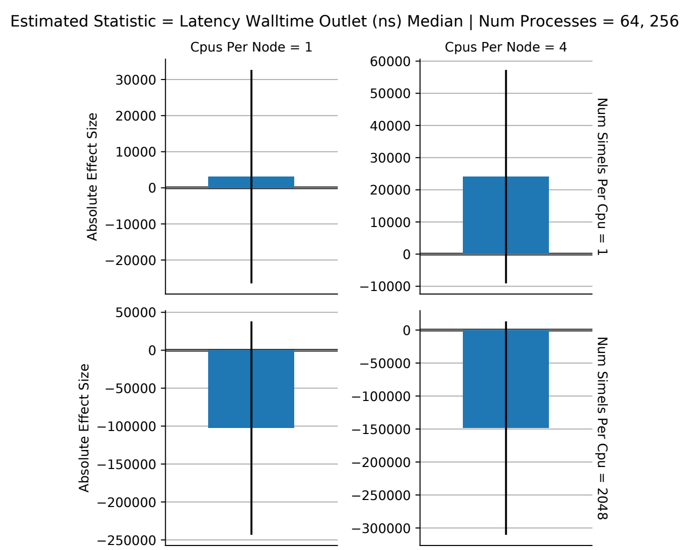
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

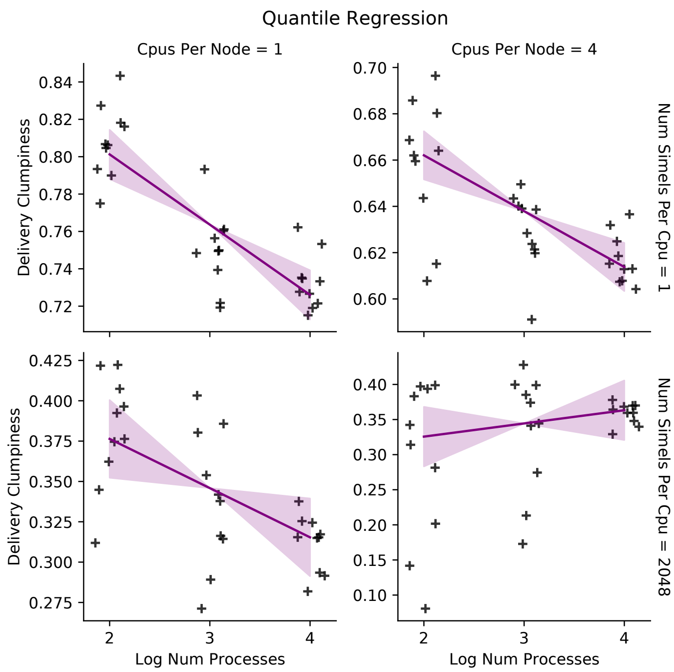


(c) TODO partial regression

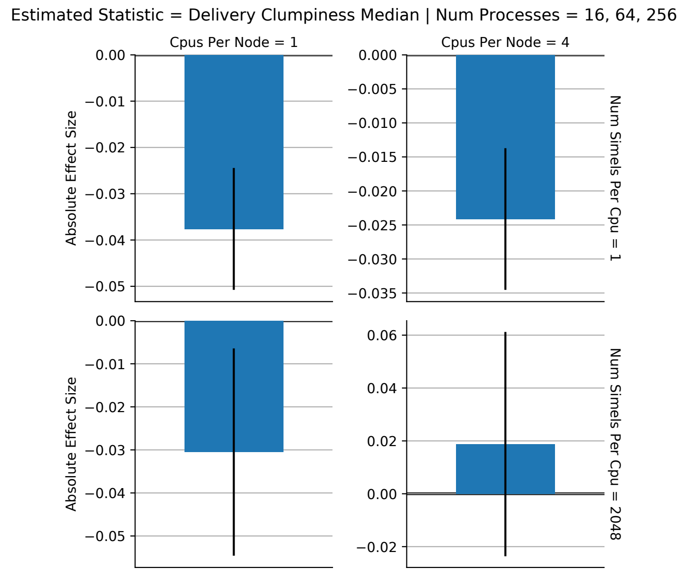


(d) TODO partial regression effect size

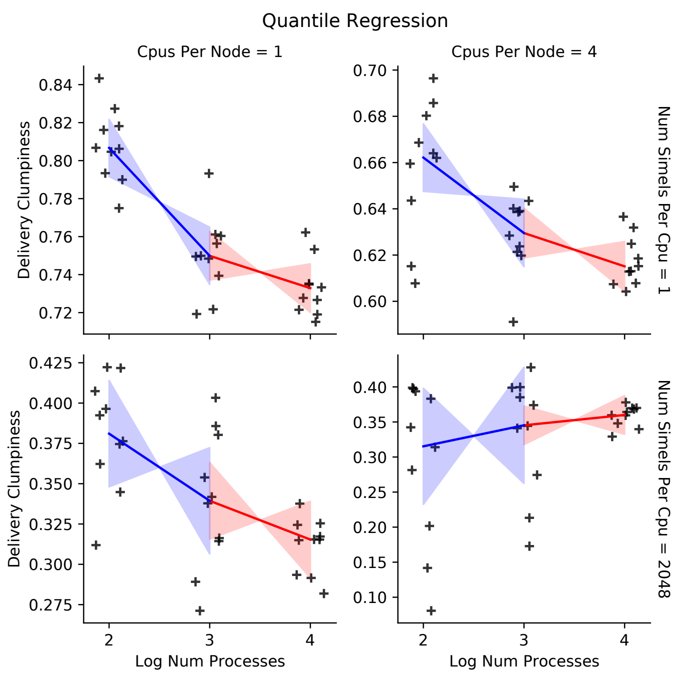
Fig. 20: weak scaling Latency Walltime Outlet (ns) quantile regression to estimate median



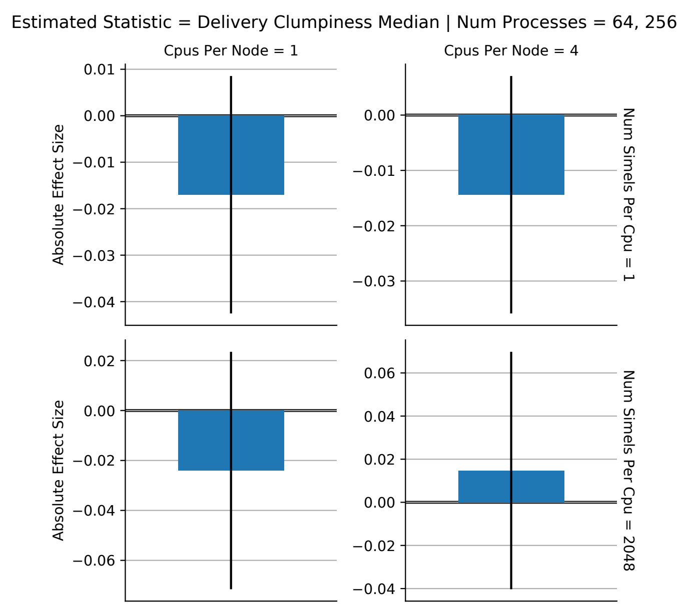
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

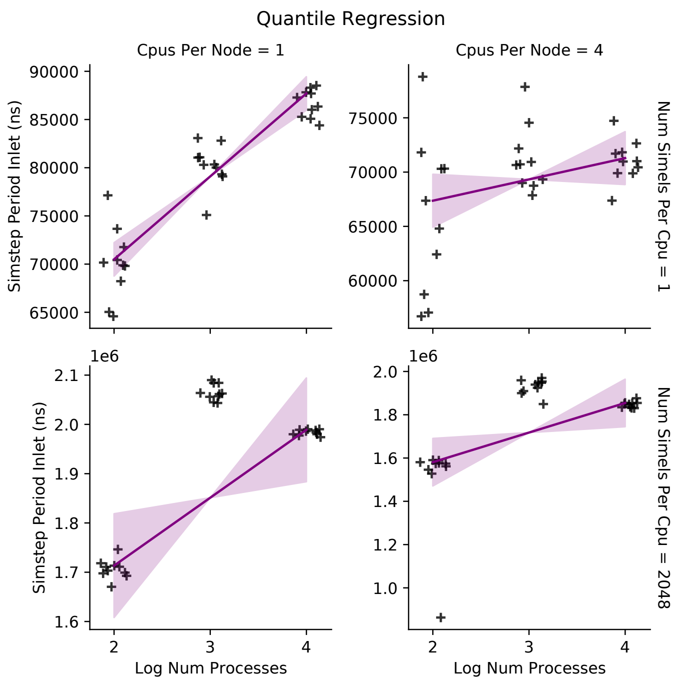


(c) TODO partial regression

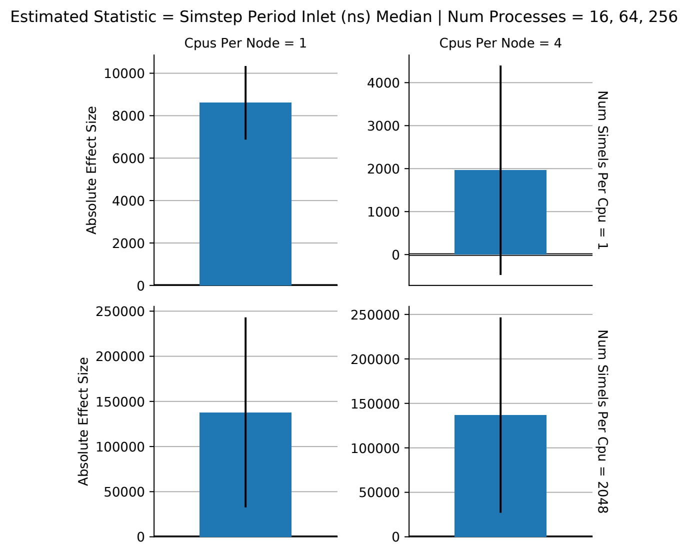


(d) TODO partial regression effect size

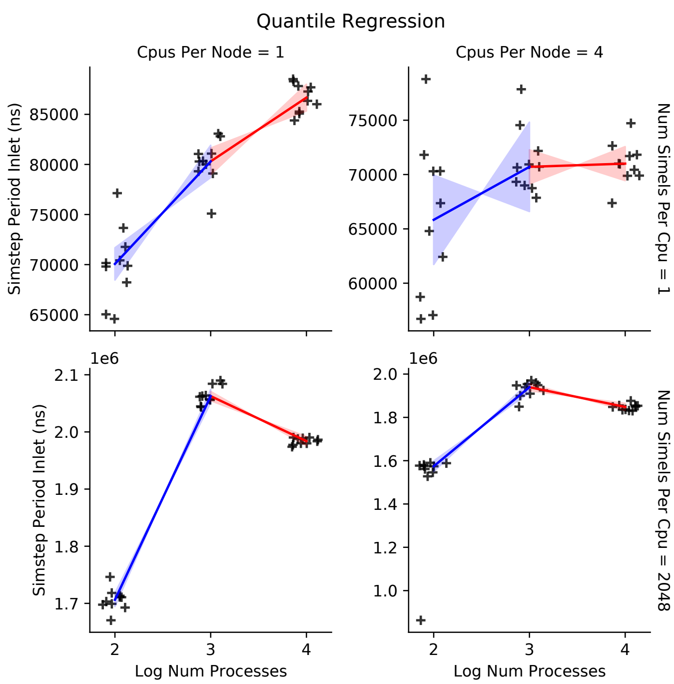
Fig. 21: weak scaling Delivery Clumpiness quantile regression to estimate median



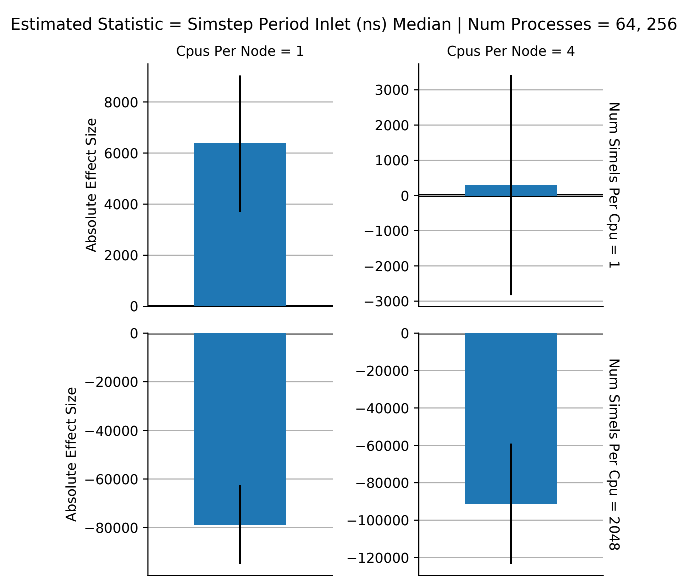
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

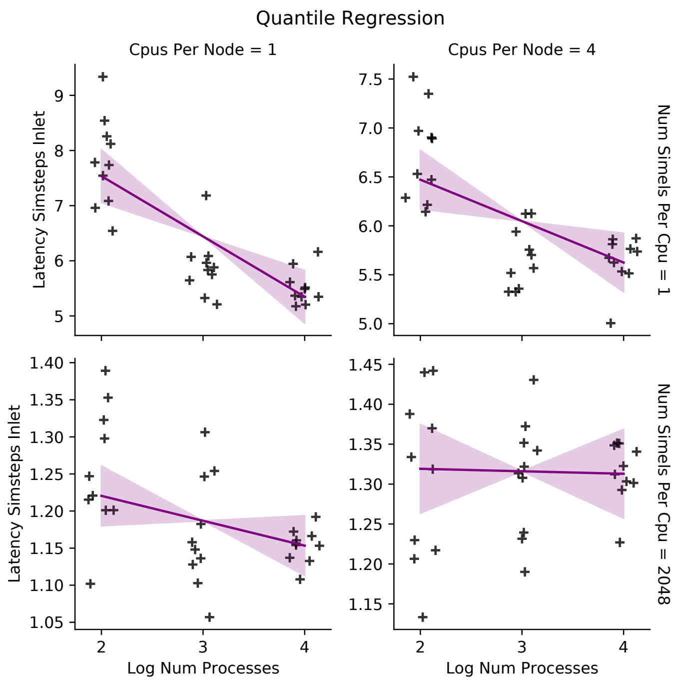


(c) TODO partial regression

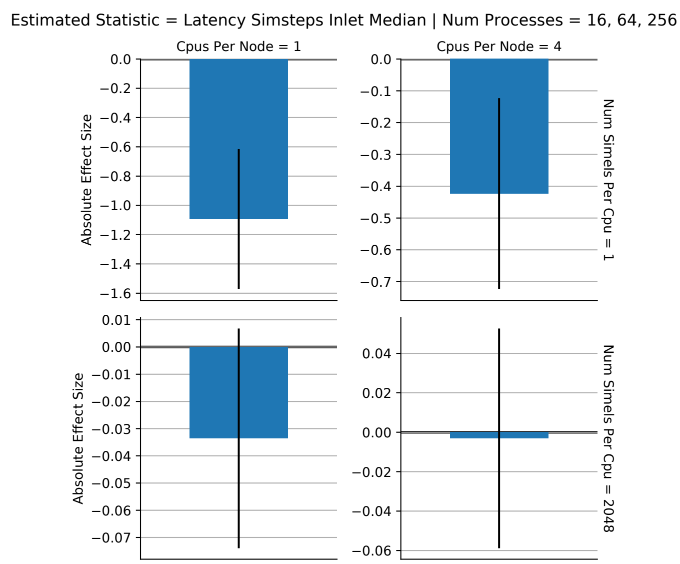


(d) TODO partial regression effect size

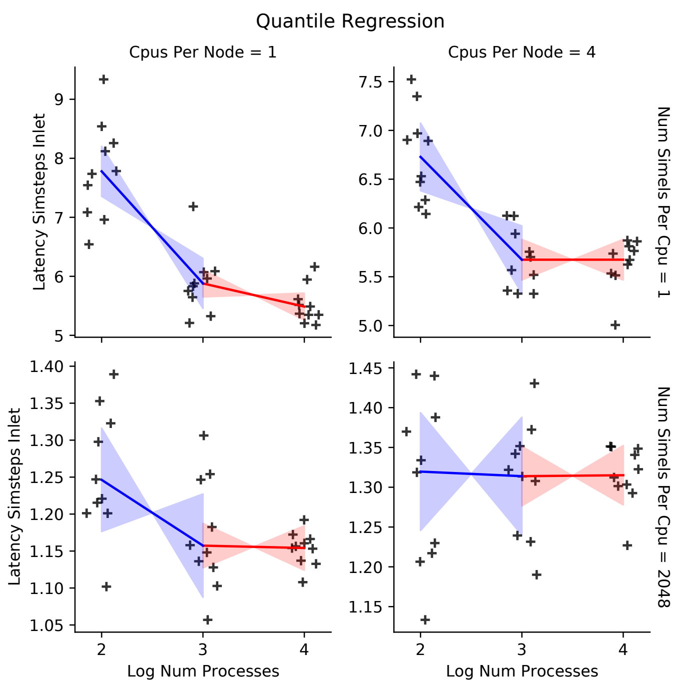
Fig. 22: weak scaling Simstep Period Inlet (ns) quantile regression to estimate median



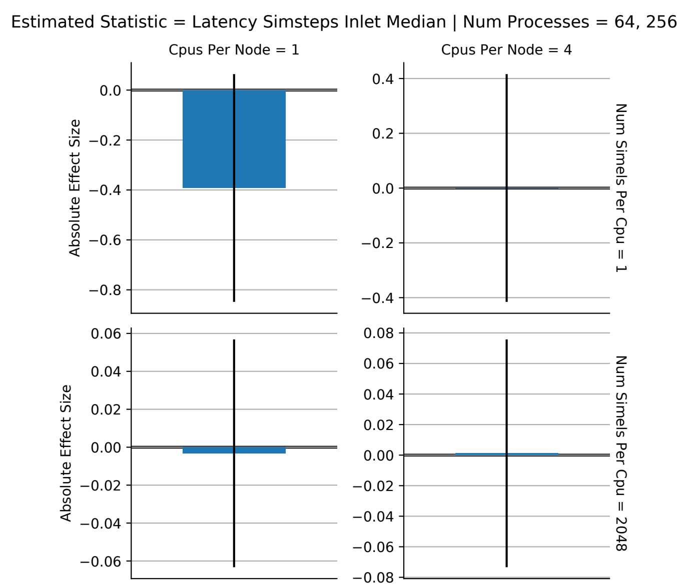
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

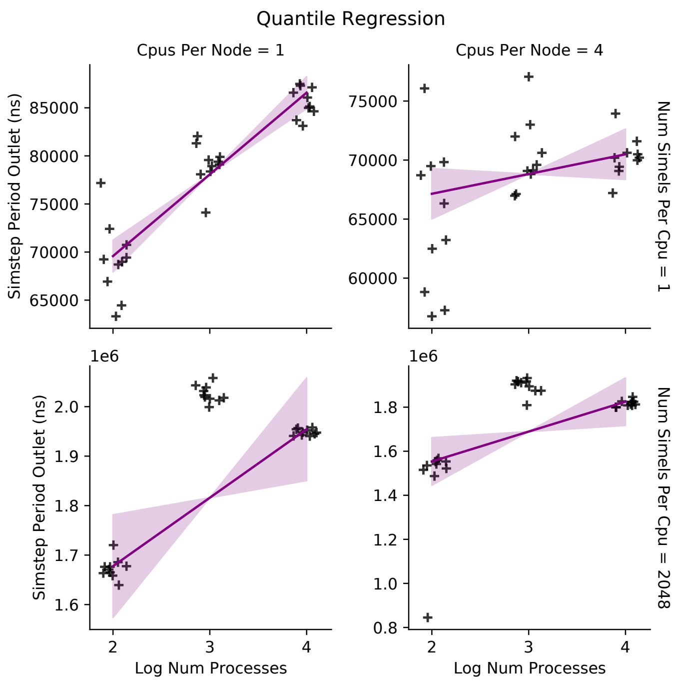


(c) TODO partial regression

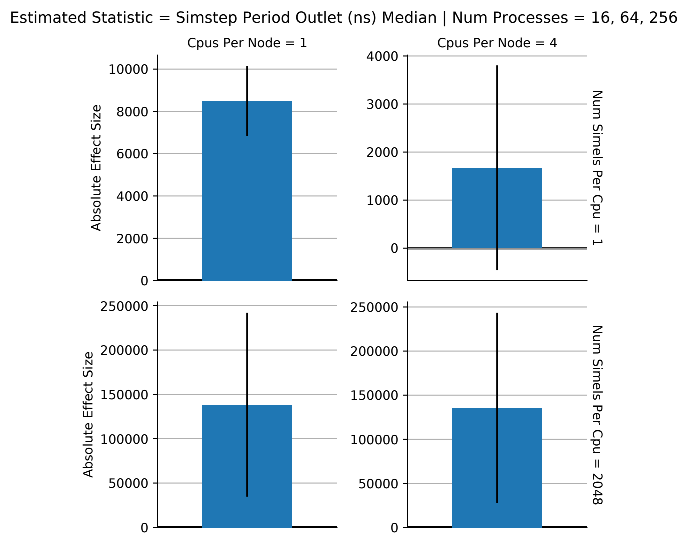


(d) TODO partial regression effect size

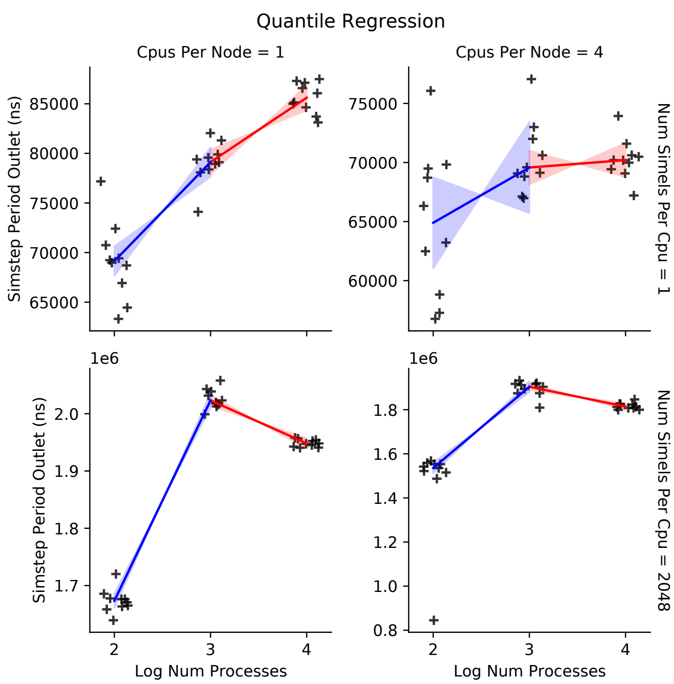
Fig. 23: weak scaling Latency Simsteps Inlet quantile regression to estimate median



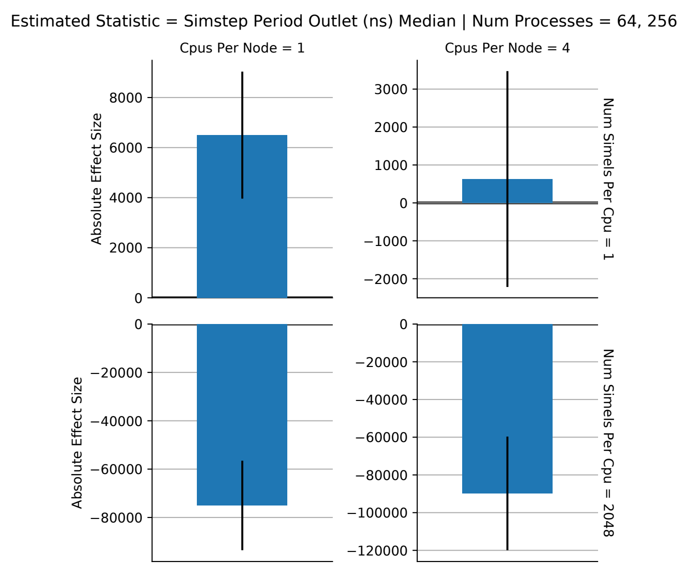
(a) TODO complete ordinary regression



(b) TODO complete regression effect size

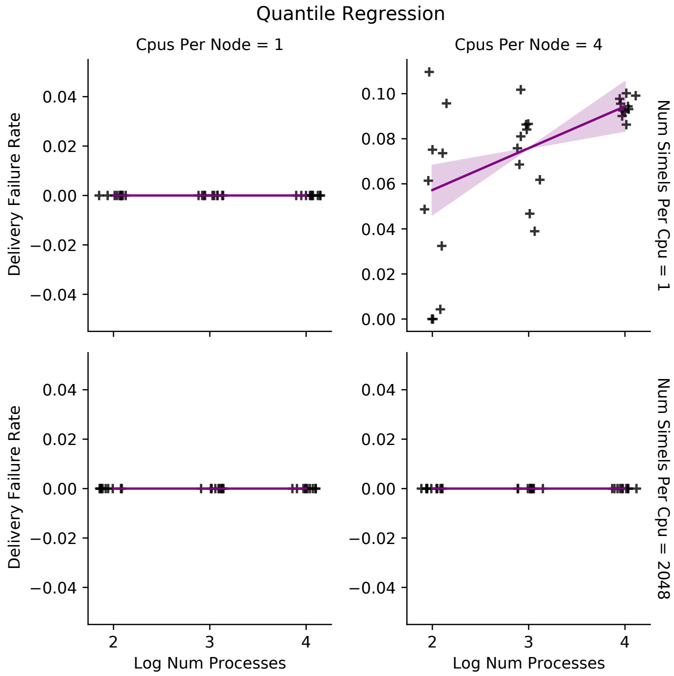


(c) TODO partial regression

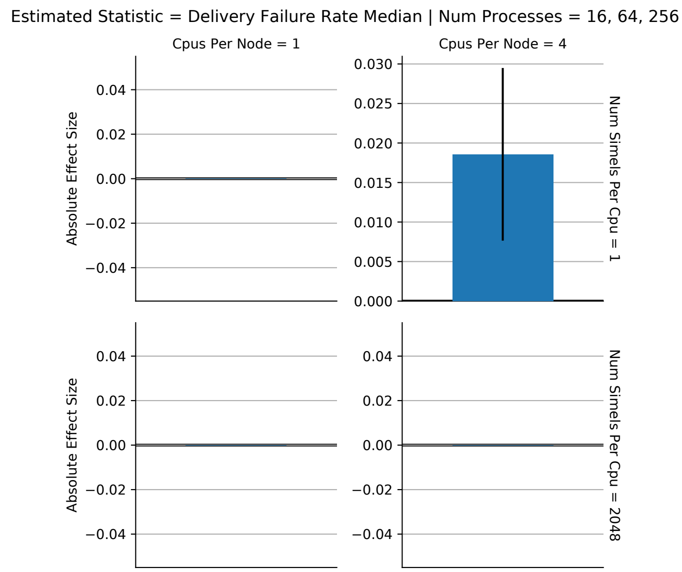


(d) TODO partial regression effect size

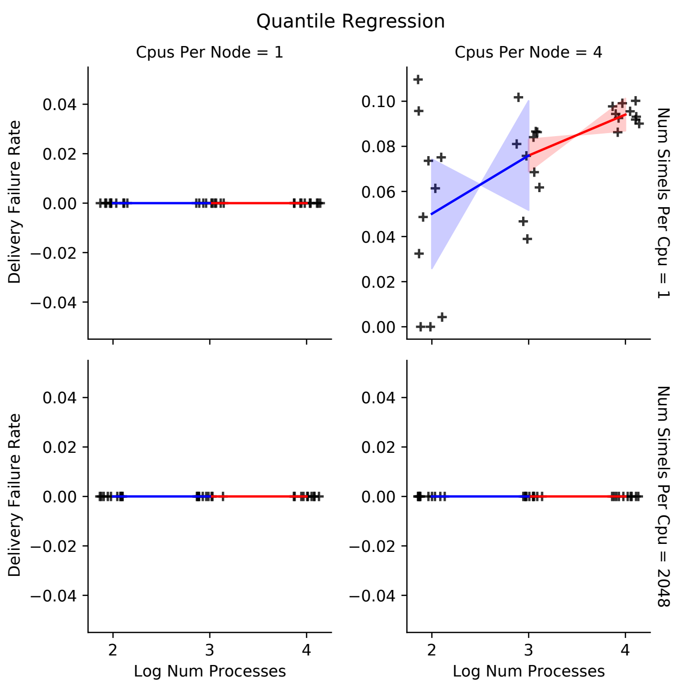
Fig. 24: weak scaling Simstep Period Outlet (ns) quantile regression to estimate median



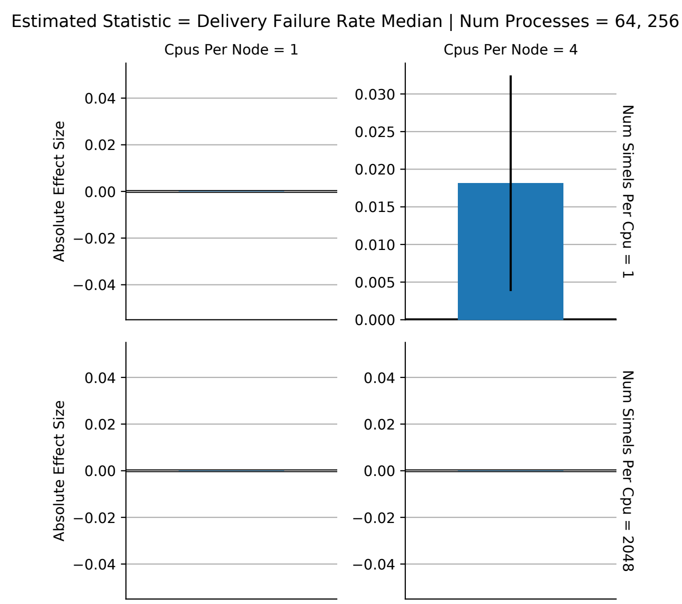
(a) TODO complete ordinary regression



(b) TODO complete regression effect size



(c) TODO partial regression



(d) TODO partial regression effect size

Fig. 25: weak scaling Delivery Failure Rate quantile regression to estimate median

TABLE II: Latency Walltime Inlet (ns)Ordinary Least Squares Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Latency Walltime Inlet (ns)	mean	-	1	1	16/64/256	-19'000	-35'000	-2'400	-0.033	-0.062	-0.0043	30	0.026
Latency Walltime Inlet (ns)	mean	+	1	2048	16/64/256	5.5e+06	3.5e+06	7.5e+06	2.5	1.6	3.4	30	4.8e-06
Latency Walltime Inlet (ns)	mean	0	4	1	16/64/256	-110'000	-350'000	120'000	-0.13	-0.4	0.14	30	0.33
Latency Walltime Inlet (ns)	mean	+	4	2048	16/64/256	230'000	110'000	340'000	0.11	0.057	0.17	30	0.0003
Latency Walltime Inlet (ns)	mean	-	1	1	16/64	-63'000	-92'000	-34'000	-0.11	-0.16	-0.061	20	0.00024
Latency Walltime Inlet (ns)	mean	+	1	2048	16/64	300'000	170'000	430'000	0.14	0.077	0.2	20	0.00014
Latency Walltime Inlet (ns)	mean	0	4	1	16/64	-320'000	-900'000	260'000	-0.37	-1	0.3	20	0.26
Latency Walltime Inlet (ns)	mean	+	4	2048	16/64	660'000	530'000	800'000	0.33	0.27	0.4	20	5.5e-09
Latency Walltime Inlet (ns)	mean	0	1	1	64/256	26'000	-990	52'000	0.046	-0.0018	0.093	20	0.058
Latency Walltime Inlet (ns)	mean	+	1	2048	64/256	1.1e+07	6.5e+06	1.5e+07	4.9	3	6.8	20	3.9e-05
Latency Walltime Inlet (ns)	mean	0	4	1	64/256	93'000	-44'000	230'000	0.11	-0.051	0.27	20	0.17
Latency Walltime Inlet (ns)	mean	-	4	2048	64/256	-210'000	-310'000	-110'000	-0.11	-0.16	-0.055	20	0.00039

TABLE III: Latency Simsteps OutletOrdinary Least Squares Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Latency Simsteps Outlet	mean	-	1	1	16/64/256	-1.1	-1.4	-0.73	-0.13	-0.17	-0.087	30	5.5e-07
Latency Simsteps Outlet	mean	+	1	2048	16/64/256	2.9	1.8	4	2.2	1.3	3	30	1.1e-05
Latency Simsteps Outlet	mean	NaN	4	1	16/64/256	inf	nan	nan	inf	nan	nan	30	nan
Latency Simsteps Outlet	mean	0	4	2048	16/64/256	0.017	-0.017	0.052	0.013	-0.012	0.038	30	0.3
Latency Simsteps Outlet	mean	-	1	1	16/64	-2	-2.7	-1.4	-0.24	-0.32	-0.17	20	1.9e-06
Latency Simsteps Outlet	mean	-	1	2048	16/64	-0.092	-0.17	-0.013	-0.069	-0.13	-0.0097	20	0.025
Latency Simsteps Outlet	mean	-	4	1	16/64	-1.4	-2.1	-0.71	-0.17	-0.26	-0.087	20	0.00053
Latency Simsteps Outlet	mean	0	4	2048	16/64	0.048	-0.035	0.13	0.036	-0.026	0.097	20	0.24
Latency Simsteps Outlet	mean	0	1	1	64/256	-0.099	-0.56	0.36	-0.012	-0.067	0.043	20	0.65
Latency Simsteps Outlet	mean	+	1	2048	64/256	5.8	3.6	8	4.4	2.7	6.1	20	3.8e-05
Latency Simsteps Outlet	mean	NaN	4	1	64/256	inf	nan	nan	inf	nan	nan	20	nan
Latency Simsteps Outlet	mean	0	4	2048	64/256	-0.013	-0.066	0.04	-0.0095	-0.049	0.03	20	0.62

TABLE IV: Latency Walltime Outlet (ns)Ordinary Least Squares Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Latency Walltime Outlet (ns)	mean	-	1	1	16/64/256	-20’000	-36’000	-3’000	-0.035	-0.064	-0.0054	30	0.022
Latency Walltime Outlet (ns)	mean	+	1	2048	16/64/256	5.5e+06	3.5e+06	7.4e+06	2.5	1.6	3.4	30	5e-06
Latency Walltime Outlet (ns)	mean	NaN	4	1	16/64/256	inf	nan	nan	inf	nan	nan	30	nan
Latency Walltime Outlet (ns)	mean	+	4	2048	16/64/256	230’000	110’000	340’000	0.11	0.056	0.17	30	0.00034
Latency Walltime Outlet (ns)	mean	-	1	1	16/64	-65’000	-95’000	-36’000	-0.12	-0.17	-0.063	20	0.00021
Latency Walltime Outlet (ns)	mean	+	1	2048	16/64	290’000	160’000	430’000	0.13	0.073	0.19	20	0.00021
Latency Walltime Outlet (ns)	mean	0	4	1	16/64	-2.5e+06	-7.2e+06	2.2e+06	-0.82	-2.4	0.73	20	0.28
Latency Walltime Outlet (ns)	mean	+	4	2048	16/64	670’000	530’000	810’000	0.33	0.26	0.4	20	8e-09
Latency Walltime Outlet (ns)	mean	0	1	1	64/256	26’000	-1’500	53’000	0.045	-0.0026	0.093	20	0.062
Latency Walltime Outlet (ns)	mean	+	1	2048	64/256	1.1e+07	6.5e+06	1.5e+07	4.8	2.9	6.7	20	4e-05
Latency Walltime Outlet (ns)	mean	NaN	4	1	64/256	inf	nan	nan	inf	nan	nan	20	nan
Latency Walltime Outlet (ns)	mean	-	4	2048	64/256	-210’000	-320’000	-110’000	-0.11	-0.16	-0.054	20	0.00045

TABLE V: Delivery ClumpinessOrdinary Least Squares Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Delivery Clumpiness	mean	-	1	1	16/64/256	-0.036	-0.045	-0.026	-0.044	-0.056	-0.033	30	1.6e-08
Delivery Clumpiness	mean	-	1	2048	16/64/256	-0.03	-0.044	-0.015	-0.078	-0.12	-0.041	30	0.00021
Delivery Clumpiness	mean	-	4	1	16/64/256	-0.021	-0.033	-0.0087	-0.033	-0.052	-0.014	30	0.0016
Delivery Clumpiness	mean	0	4	2048	16/64/256	0.028	-0.0021	0.058	0.1	-0.0077	0.21	30	0.067
Delivery Clumpiness	mean	-	1	1	16/64	-0.055	-0.074	-0.036	-0.068	-0.092	-0.044	20	1.1e-05
Delivery Clumpiness	mean	0	1	2048	16/64	-0.034	-0.07	0.001	-0.092	-0.19	0.0027	20	0.056
Delivery Clumpiness	mean	0	4	1	16/64	-0.022	-0.053	0.0087	-0.034	-0.082	0.013	20	0.15
Delivery Clumpiness	mean	0	4	2048	16/64	0.038	-0.038	0.11	0.14	-0.14	0.41	20	0.31
Delivery Clumpiness	mean	-	1	1	64/256	-0.017	-0.033	-0.0002	-0.021	-0.041	-0.00025	20	0.048
Delivery Clumpiness	mean	0	1	2048	64/256	-0.025	-0.052	0.003	-0.065	-0.14	0.008	20	0.078
Delivery Clumpiness	mean	-	4	1	64/256	-0.02	-0.035	-0.0039	-0.031	-0.055	-0.0061	20	0.017
Delivery Clumpiness	mean	0	4	2048	64/256	0.018	-0.035	0.071	0.065	-0.13	0.25	20	0.48

TABLE VI: Simstep Period Inlet (ns)Ordinary Least Squares Regression.

Metric	**Statistic**	**Significant Effect Sign**	**Cpus Per Node**	**Num Simels Per Cpu**	**Num Processes**	**Absolute Effect Size**	**Absolute Effect Size 95% CI Lower Bound**	**Absolute Effect Size 95% CI Upper Bound**	**Relative Effect Size**	**Relative Effect Size 95% CI Lower Bound**	**Relative Effect Size 95% CI Upper Bound**	**n**	**p**
Simstep Period Inlet (ns)	mean	+	1	1	16/64/256	8'800	7'400	10'000	0.12	0.11	0.14	30	1.4e-13
Simstep Period Inlet (ns)	mean	+	1	2048	16/64/256	150'000	97'000	190'000	0.085	0.056	0.11	30	1.5e-06
Simstep Period Inlet (ns)	mean	NaN	4	1	16/64/256	nan	nan	nan	nan	nan	nan	30	nan
Simstep Period Inlet (ns)	mean	+	4	2048	16/64/256	160'000	89'000	220'000	0.1	0.058	0.15	30	5.6e-05
Simstep Period Inlet (ns)	mean	+	1	1	16/64	12'000	9'200	15'000	0.17	0.13	0.21	20	4.5e-08
Simstep Period Inlet (ns)	mean	+	1	2048	16/64	360'000	350'000	380'000	0.21	0.2	0.22	20	7e-21
Simstep Period Inlet (ns)	mean	NaN	4	1	16/64	-inf	nan	nan	nan	nan	nan	20	nan
Simstep Period Inlet (ns)	mean	+	4	2048	16/64	450'000	430'000	480'000	0.3	0.28	0.31	20	6.2e-20
Simstep Period Inlet (ns)	mean	+	1	1	64/256	5'600	3'700	7'500	0.08	0.052	0.11	20	8.8e-06
Simstep Period Inlet (ns)	mean	-	1	2048	64/256	-72'000	-83'000	-61'000	-0.042	-0.049	-0.036	20	5.8e-11
Simstep Period Inlet (ns)	mean	NaN	4	1	64/256	inf	nan	nan	nan	nan	nan	20	nan
Simstep Period Inlet (ns)	mean	-	4	2048	64/256	-140'000	-160'000	-120'000	-0.093	-0.11	-0.079	20	4.4e-11

TABLE VII: Latency Simsteps InletOrdinary Least Squares Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Latency Simsteps Inlet	mean	-	1	1	16/64/256	-1	-1.4	-0.7	-0.13	-0.17	-0.086	30	5.7e-07
Latency Simsteps Inlet	mean	+	1	2048	16/64/256	2.8	1.7	3.9	2.2	1.4	3.1	30	1.1e-05
Latency Simsteps Inlet	mean	-	4	1	16/64/256	-0.64	-0.97	-0.3	-0.079	-0.12	-0.037	30	0.00055
Latency Simsteps Inlet	mean	0	4	2048	16/64/256	0.016	-0.016	0.047	0.012	-0.012	0.036	30	0.32
Latency Simsteps Inlet	mean	-	1	1	16/64	-2	-2.6	-1.4	-0.24	-0.31	-0.17	20	2e-06
Latency Simsteps Inlet	mean	-	1	2048	16/64	-0.081	-0.16	-0.0058	-0.064	-0.12	-0.0045	20	0.036
Latency Simsteps Inlet	mean	-	4	1	16/64	-1.4	-2.1	-0.69	-0.17	-0.26	-0.085	20	0.00055
Latency Simsteps Inlet	mean	0	4	2048	16/64	0.043	-0.033	0.12	0.032	-0.025	0.09	20	0.25
Latency Simsteps Inlet	mean	0	1	1	64/256	-0.09	-0.53	0.35	-0.011	-0.065	0.043	20	0.67
Latency Simsteps Inlet	mean	+	1	2048	64/256	5.7	3.5	8	4.5	2.8	6.2	20	3.8e-05
Latency Simsteps Inlet	mean	0	4	1	64/256	0.1	-0.39	0.6	0.013	-0.049	0.074	20	0.67
Latency Simsteps Inlet	mean	0	4	2048	64/256	-0.011	-0.061	0.038	-0.0086	-0.046	0.029	20	0.64

TABLE VIII: Simstep Period Outlet (ns)Ordinary Least Squares Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Simstep Period Outlet (ns)	mean	+	1	1	16/64/256	8’700	7’400	10’000	0.13	0.11	0.14	30	1.2e-13
Simstep Period Outlet (ns)	mean	+	1	2048	16/64/256	150’000	98’000	190’000	0.087	0.058	0.12	30	1.2e-06
Simstep Period Outlet (ns)	mean	NaN	4	1	16/64/256	nan	nan	nan	nan	nan	nan	30	nan
Simstep Period Outlet (ns)	mean	+	4	2048	16/64/256	150’000	87’000	220’000	0.1	0.058	0.15	30	5.5e-05
Simstep Period Outlet (ns)	mean	+	1	1	16/64	12’000	9’100	15’000	0.17	0.13	0.21	20	4.2e-08
Simstep Period Outlet (ns)	mean	+	1	2048	16/64	360’000	350’000	380’000	0.22	0.21	0.22	20	8.8e-21
Simstep Period Outlet (ns)	mean	NaN	4	1	16/64	-inf	nan	nan	nan	nan	nan	20	nan
Simstep Period Outlet (ns)	mean	+	4	2048	16/64	440’000	420’000	470’000	0.3	0.28	0.31	20	3.4e-19
Simstep Period Outlet (ns)	mean	+	1	1	64/256	5’600	3’700	7’500	0.081	0.053	0.11	20	7.1e-06
Simstep Period Outlet (ns)	mean	-	1	2048	64/256	-69’000	-79’000	-59’000	-0.041	-0.047	-0.035	20	2.2e-11
Simstep Period Outlet (ns)	mean	NaN	4	1	64/256	inf	nan	nan	nan	nan	nan	20	nan
Simstep Period Outlet (ns)	mean	-	4	2048	64/256	-140’000	-160’000	-120’000	-0.092	-0.11	-0.078	20	6.5e-11

TABLE IX: Delivery Failure RateOrdinary Least Squares Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Delivery Failure Rate	mean	NaN	1	1	16/64/256	0	0	0	nan	nan	nan	30	nan
Delivery Failure Rate	mean	+	1	2048	16/64/256	0.0015	0.0011	0.0018	-13	-9.6	-16	30	2.5e-09
Delivery Failure Rate	mean	+	4	1	16/64/256	0.015	0.0088	0.02	0.15	0.091	0.21	30	1.7e-05
Delivery Failure Rate	mean	0	4	2048	16/64/256	-0.00075	-0.0016	9.3e-05	-0.49	-1	0.06	30	0.079
Delivery Failure Rate	mean	NaN	1	1	16/64	0	0	0	nan	nan	nan	20	nan
Delivery Failure Rate	mean	0	1	2048	16/64	8.6e-06	-0.00013	0.00015	-0.073	1.1	-1.3	20	0.9
Delivery Failure Rate	mean	0	4	1	16/64	-5.7e-08	-0.012	0.012	-5.8e-07	-0.12	0.12	20	1
Delivery Failure Rate	mean	0	4	2048	16/64	-0.00047	-0.0026	0.0016	-0.31	-1.7	1.1	20	0.64
Delivery Failure Rate	mean	NaN	1	1	64/256	0	0	0	nan	nan	nan	20	nan
Delivery Failure Rate	mean	+	1	2048	64/256	0.0029	0.0026	0.0032	-25	-23	-28	20	6.7e-14
Delivery Failure Rate	mean	+	4	1	64/256	0.029	0.025	0.033	0.3	0.26	0.34	20	1.7e-11
Delivery Failure Rate	mean	0	4	2048	64/256	-0.001	-0.0026	0.00055	-0.66	-1.7	0.36	20	0.19

TABLE X: Latency Walltime Inlet (ns)Quantile Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Latency Walltime Inlet (ns)	median	-	1	1	16/64/256	-26’000	-47’000	-6’000	-0.049	-0.087	-0.011	30	0.013
Latency Walltime Inlet (ns)	median	0	1	2048	16/64/256	61’000	-29’000	150’000	0.029	-0.014	0.072	30	0.18
Latency Walltime Inlet (ns)	median	0	4	1	16/64/256	-1’400	-23’000	20’000	-0.003	-0.05	0.044	30	0.9
Latency Walltime Inlet (ns)	median	+	4	2048	16/64/256	200’000	25’000	380’000	0.11	0.014	0.21	30	0.027
Latency Walltime Inlet (ns)	median	-	1	1	16/64	-63’000	-110’000	-18’000	-0.12	-0.2	-0.034	20	0.0083
Latency Walltime Inlet (ns)	median	+	1	2048	16/64	260’000	30’000	500’000	0.12	0.014	0.23	20	0.029
Latency Walltime Inlet (ns)	median	0	4	1	16/64	-43’000	-110’000	21’000	-0.095	-0.24	0.046	20	0.17
Latency Walltime Inlet (ns)	median	+	4	2048	16/64	690’000	290’000	1.1e+06	0.38	0.16	0.6	20	0.002
Latency Walltime Inlet (ns)	median	0	1	1	64/256	2’900	-27’000	33’000	0.0055	-0.051	0.062	20	0.84
Latency Walltime Inlet (ns)	median	0	1	2048	64/256	-96’000	-230’000	35’000	-0.045	-0.11	0.017	20	0.14
Latency Walltime Inlet (ns)	median	0	4	1	64/256	24’000	-3’100	51’000	0.052	-0.0068	0.11	20	0.08
Latency Walltime Inlet (ns)	median	0	4	2048	64/256	-130’000	-310’000	48’000	-0.071	-0.17	0.026	20	0.14

TABLE XI: Latency Simsteps OutletQuantile Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Latency Simsteps Outlet	median	-	1	1	16/64/256	-1.1	-1.6	-0.55	-0.13	-0.2	-0.069	30	0.00025
Latency Simsteps Outlet	median	0	1	2048	16/64/256	-0.037	-0.08	0.0057	-0.029	-0.063	0.0045	30	0.087
Latency Simsteps Outlet	median	-	4	1	16/64/256	-0.47	-0.76	-0.18	-0.068	-0.11	-0.026	30	0.0027
Latency Simsteps Outlet	median	0	4	2048	16/64/256	-0.003	-0.063	0.057	-0.0022	-0.047	0.042	30	0.92
Latency Simsteps Outlet	median	-	1	1	16/64	-2	-3	-1.1	-0.25	-0.38	-0.13	20	0.00033
Latency Simsteps Outlet	median	0	1	2048	16/64	-0.096	-0.24	0.051	-0.075	-0.19	0.04	20	0.19
Latency Simsteps Outlet	median	-	4	1	16/64	-1.1	-1.7	-0.43	-0.16	-0.25	-0.063	20	0.0025
Latency Simsteps Outlet	median	0	4	2048	16/64	-0.0014	-0.17	0.17	-0.001	-0.12	0.12	20	0.99
Latency Simsteps Outlet	median	0	1	1	64/256	-0.32	-0.81	0.18	-0.04	-0.1	0.022	20	0.19
Latency Simsteps Outlet	median	0	1	2048	64/256	-0.0014	-0.061	0.058	-0.0011	-0.048	0.046	20	0.96
Latency Simsteps Outlet	median	0	4	1	64/256	-0.017	-0.43	0.4	-0.0024	-0.063	0.058	20	0.93
Latency Simsteps Outlet	median	0	4	2048	64/256	-0.0068	-0.081	0.068	-0.005	-0.06	0.05	20	0.85

TABLE XII: Latency Walltime Outlet (ns)Quantile Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Latency Walltime Outlet (ns)	median	-	1	1	16/64/256	-26’000	-47’000	-4’900	-0.048	-0.086	-0.0091	30	0.017
Latency Walltime Outlet (ns)	median	0	1	2048	16/64/256	60’000	-32’000	150’000	0.028	-0.015	0.071	30	0.19
Latency Walltime Outlet (ns)	median	0	4	1	16/64/256	-3’400	-26’000	19’000	-0.0074	-0.056	0.041	30	0.75
Latency Walltime Outlet (ns)	median	+	4	2048	16/64/256	200’000	13’000	380’000	0.11	0.0073	0.21	30	0.036
Latency Walltime Outlet (ns)	median	-	1	1	16/64	-69’000	-120’000	-21’000	-0.13	-0.22	-0.038	20	0.0077
Latency Walltime Outlet (ns)	median	+	1	2048	16/64	260’000	7’700	520’000	0.12	0.0036	0.24	20	0.044
Latency Walltime Outlet (ns)	median	0	4	1	16/64	-44’000	-110’000	20’000	-0.096	-0.24	0.044	20	0.17
Latency Walltime Outlet (ns)	median	+	4	2048	16/64	710’000	300’000	1.1e+06	0.38	0.16	0.6	20	0.0017
Latency Walltime Outlet (ns)	median	0	1	1	64/256	3’100	-26’000	33’000	0.0057	-0.049	0.06	20	0.83
Latency Walltime Outlet (ns)	median	0	1	2048	64/256	-100’000	-240’000	38’000	-0.048	-0.11	0.018	20	0.14
Latency Walltime Outlet (ns)	median	0	4	1	64/256	24’000	-9’100	57’000	0.052	-0.02	0.12	20	0.14
Latency Walltime Outlet (ns)	median	0	4	2048	64/256	-150’000	-310’000	13’000	-0.08	-0.17	0.0072	20	0.07

TABLE XIII: Delivery ClumpinessQuantile Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Delivery Clumpiness	median	-	1	1	16/64/256	-0.038	-0.051	-0.024	-0.047	-0.063	-0.03	30	2.7e-06
Delivery Clumpiness	median	-	1	2048	16/64/256	-0.031	-0.055	-0.0064	-0.079	-0.14	-0.017	30	0.015
Delivery Clumpiness	median	-	4	1	16/64/256	-0.024	-0.035	-0.014	-0.036	-0.052	-0.021	30	5.5e-05
Delivery Clumpiness	median	0	4	2048	16/64/256	0.019	-0.024	0.061	0.057	-0.072	0.19	30	0.37
Delivery Clumpiness	median	-	1	1	16/64	-0.057	-0.087	-0.027	-0.07	-0.11	-0.033	20	0.00091
Delivery Clumpiness	median	0	1	2048	16/64	-0.042	-0.11	0.024	-0.11	-0.28	0.063	20	0.2
Delivery Clumpiness	median	-	4	1	16/64	-0.033	-0.062	-0.0034	-0.049	-0.093	-0.0052	20	0.031
Delivery Clumpiness	median	0	4	2048	16/64	0.03	-0.14	0.2	0.091	-0.41	0.6	20	0.71
Delivery Clumpiness	median	0	1	1	64/256	-0.017	-0.043	0.0085	-0.021	-0.053	0.011	20	0.18
Delivery Clumpiness	median	0	1	2048	64/256	-0.024	-0.072	0.024	-0.063	-0.19	0.061	20	0.3
Delivery Clumpiness	median	0	4	1	64/256	-0.014	-0.036	0.0071	-0.022	-0.054	0.011	20	0.18
Delivery Clumpiness	median	0	4	2048	64/256	0.015	-0.04	0.07	0.045	-0.12	0.21	20	0.58

TABLE XIV: Simsteps Period Inlet (ns)Quantile Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Simstep Period Inlet (ns)	median	+	1	1	16/64/256	8’600	6’900	10’000	0.12	0.098	0.15	30	6.7e-11
Simstep Period Inlet (ns)	median	+	1	2048	16/64/256	140’000	33’000	240’000	0.081	0.019	0.14	30	0.012
Simstep Period Inlet (ns)	median	0	4	1	16/64/256	2’000	-470	4’400	0.03	-0.0072	0.067	30	0.11
Simstep Period Inlet (ns)	median	+	4	2048	16/64/256	140’000	27’000	250’000	0.087	0.017	0.16	30	0.016
Simstep Period Inlet (ns)	median	+	1	1	16/64	10’000	7’000	13’000	0.15	0.1	0.19	20	2.9e-06
Simstep Period Inlet (ns)	median	+	1	2048	16/64	360’000	330’000	380’000	0.21	0.2	0.22	20	2.7e-17
Simstep Period Inlet (ns)	median	0	4	1	16/64	4’900	-3’300	13’000	0.074	-0.051	0.2	20	0.23
Simstep Period Inlet (ns)	median	+	4	2048	16/64	370’000	320’000	410’000	0.23	0.2	0.26	20	6.8e-12
Simstep Period Inlet (ns)	median	+	1	1	64/256	6’400	3’700	9’000	0.091	0.053	0.13	20	9e-05
Simstep Period Inlet (ns)	median	-	1	2048	64/256	-79’000	-95’000	-63’000	-0.046	-0.056	-0.037	20	6.5e-09
Simstep Period Inlet (ns)	median	0	4	1	64/256	300	-2’800	3’400	0.0045	-0.043	0.052	20	0.85
Simstep Period Inlet (ns)	median	-	4	2048	64/256	-91’000	-120’000	-59’000	-0.058	-0.078	-0.037	20	1.2e-05

TABLE XV: Latency Simsteps InletQuantile Regression.

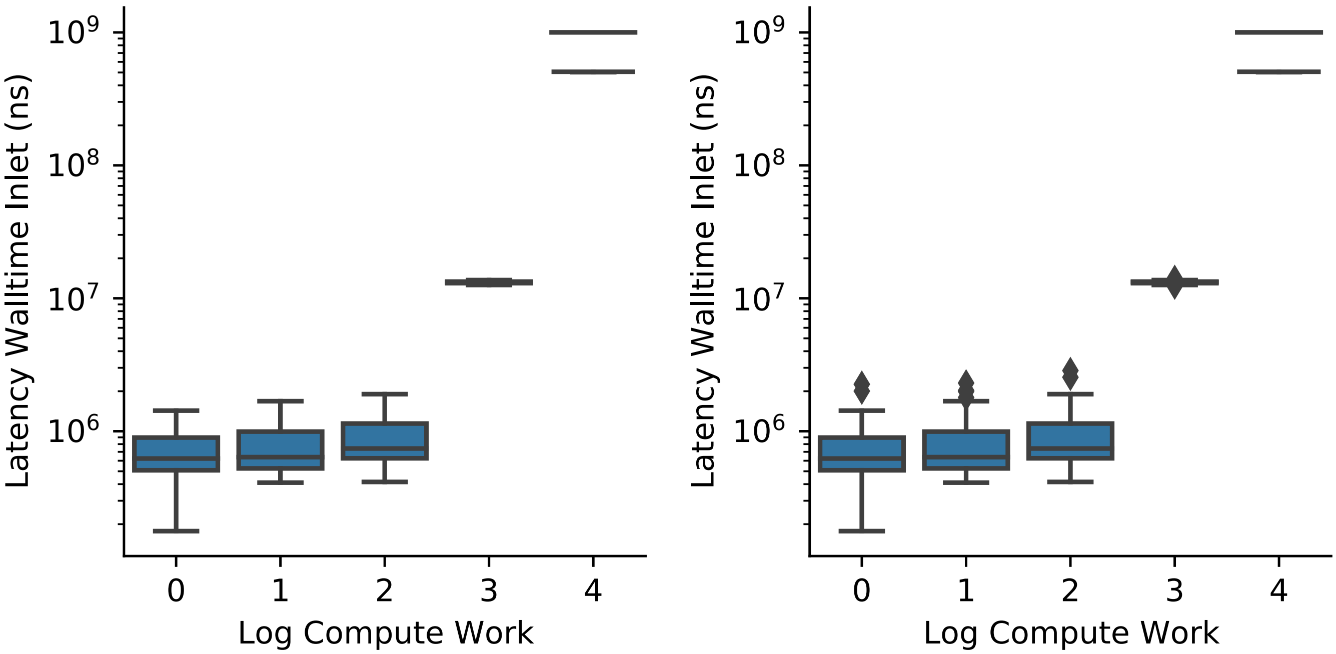
Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Latency Simsteps Inlet	median	-	1	1	16/64/256	-1.1	-1.6	-0.62	-0.14	-0.2	-0.079	30	6.6e-05
Latency Simsteps Inlet	median	0	1	2048	16/64/256	-0.034	-0.074	0.0068	-0.027	-0.06	0.0055	30	0.1
Latency Simsteps Inlet	median	-	4	1	16/64/256	-0.42	-0.72	-0.12	-0.063	-0.11	-0.018	30	0.0074
Latency Simsteps Inlet	median	0	4	2048	16/64/256	-0.0031	-0.059	0.053	-0.0023	-0.044	0.04	30	0.91
Latency Simsteps Inlet	median	-	1	1	16/64	-1.9	-2.7	-1.1	-0.24	-0.35	-0.14	20	0.00017
Latency Simsteps Inlet	median	0	1	2048	16/64	-0.089	-0.23	0.051	-0.072	-0.19	0.041	20	0.2
Latency Simsteps Inlet	median	-	4	1	16/64	-1.1	-1.7	-0.36	-0.16	-0.26	-0.054	20	0.005
Latency Simsteps Inlet	median	0	4	2048	16/64	-0.0057	-0.15	0.14	-0.0043	-0.12	0.11	20	0.94
Latency Simsteps Inlet	median	0	1	1	64/256	-0.39	-0.85	0.064	-0.051	-0.11	0.0082	20	0.088
Latency Simsteps Inlet	median	0	1	2048	64/256	-0.0032	-0.063	0.057	-0.0026	-0.051	0.046	20	0.91
Latency Simsteps Inlet	median	0	4	1	64/256	0.00035	-0.42	0.42	5.2e-05	-0.062	0.062	20	1
Latency Simsteps Inlet	median	0	4	2048	64/256	0.0012	-0.073	0.076	0.00089	-0.055	0.057	20	0.97

TABLE XVI: Simstep Period Outlet (ns)Quantile Regression.

Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Simstep Period Outlet (ns)	median	+	1	1	16/64/256	8’500	6’800	10’000	0.12	0.099	0.15	30	3.2e-11
Simstep Period Outlet (ns)	median	+	1	2048	16/64/256	140’000	35’000	240’000	0.083	0.021	0.14	30	0.011
Simstep Period Outlet (ns)	median	0	4	1	16/64/256	1’700	-460	3’800	0.026	-0.0071	0.059	30	0.12
Simstep Period Outlet (ns)	median	+	4	2048	16/64/256	140’000	28’000	240’000	0.088	0.018	0.16	30	0.015
Simstep Period Outlet (ns)	median	+	1	1	16/64	10’000	7’000	13’000	0.14	0.1	0.19	20	1.3e-06
Simstep Period Outlet (ns)	median	+	1	2048	16/64	350’000	330’000	370’000	0.21	0.19	0.22	20	1e-16
Simstep Period Outlet (ns)	median	0	4	1	16/64	4’700	-3’000	12’000	0.072	-0.047	0.19	20	0.22
Simstep Period Outlet (ns)	median	+	4	2048	16/64	370’000	320’000	420’000	0.24	0.21	0.27	20	6.6e-12
Simstep Period Outlet (ns)	median	+	1	1	64/256	6’500	4’000	9’000	0.094	0.057	0.13	20	4.1e-05
Simstep Period Outlet (ns)	median	-	1	2048	64/256	-75’000	-94’000	-57’000	-0.045	-0.056	-0.034	20	9.9e-08
Simstep Period Outlet (ns)	median	0	4	1	64/256	630	-2’200	3’500	0.0097	-0.034	0.054	20	0.65
Simstep Period Outlet (ns)	median	-	4	2048	64/256	-90’000	-120’000	-60’000	-0.058	-0.078	-0.039	20	6.6e-06

TABLE XVII: Delivery Failure RateQuantile Regression.

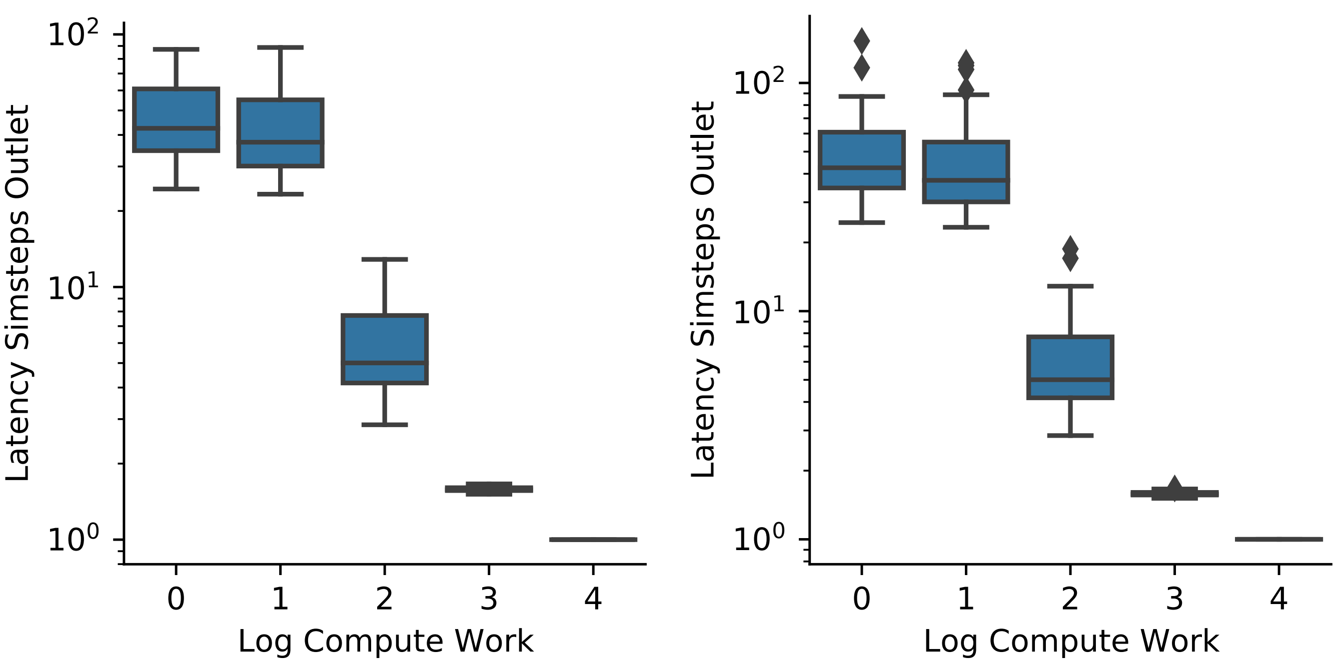
Metric	Statistic	Significant Effect Sign	Cpus Per Node	Num Simels Per Cpu	Num Processes	Absolute Effect Size	Absolute Effect Size 95% CI Lower Bound	Absolute Effect Size 95% CI Upper Bound	Relative Effect Size	Relative Effect Size 95% CI Lower Bound	Relative Effect Size 95% CI Upper Bound	n	p
Delivery Failure Rate	median	NaN	1	1	16/64/256	0	nan	nan	nan	nan	nan	30	nan
Delivery Failure Rate	median	NaN	1	2048	16/64/256	0	nan	nan	nan	nan	nan	30	nan
Delivery Failure Rate	median	+	4	1	16/64/256	0.019	0.0076	0.029	0.34	0.14	0.54	30	0.0016
Delivery Failure Rate	median	NaN	4	2048	16/64/256	0	nan	nan	nan	nan	nan	30	nan
Delivery Failure Rate	median	NaN	1	1	16/64	0	nan	nan	nan	nan	nan	20	nan
Delivery Failure Rate	median	NaN	1	2048	16/64	0	nan	nan	nan	nan	nan	20	nan
Delivery Failure Rate	median	0	4	1	16/64	0.026	-0.023	0.074	0.47	-0.41	1.4	20	0.28
Delivery Failure Rate	median	NaN	4	2048	16/64	0	nan	nan	nan	nan	nan	20	nan
Delivery Failure Rate	median	NaN	1	1	64/256	0	nan	nan	nan	nan	nan	20	nan
Delivery Failure Rate	median	NaN	1	2048	64/256	0	nan	nan	nan	nan	nan	20	nan
Delivery Failure Rate	median	+	4	1	64/256	0.018	0.0038	0.032	0.33	0.069	0.59	20	0.016
Delivery Failure Rate	median	NaN	4	2048	64/256	0	nan	nan	nan	nan	nan	20	nan



(a) TODO without outliers

(b) TODO without outliers

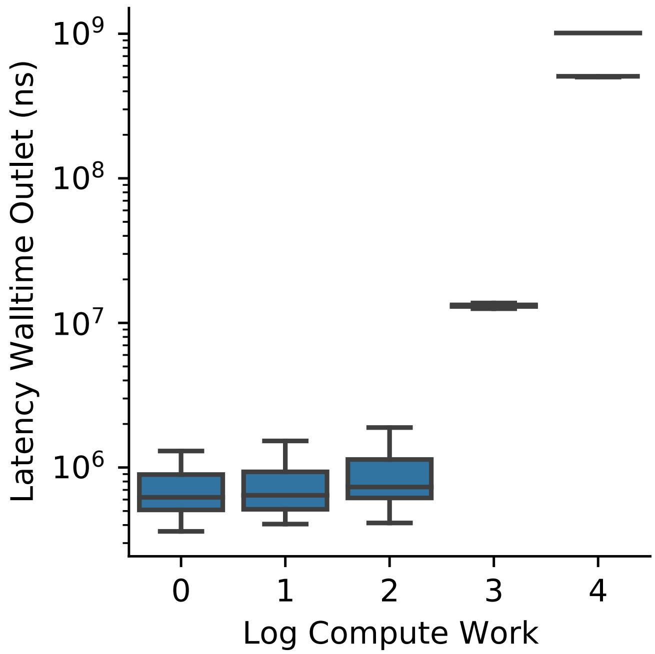
Fig. 26: computation vs communication Latency Walltime Inlet (ns) TODO



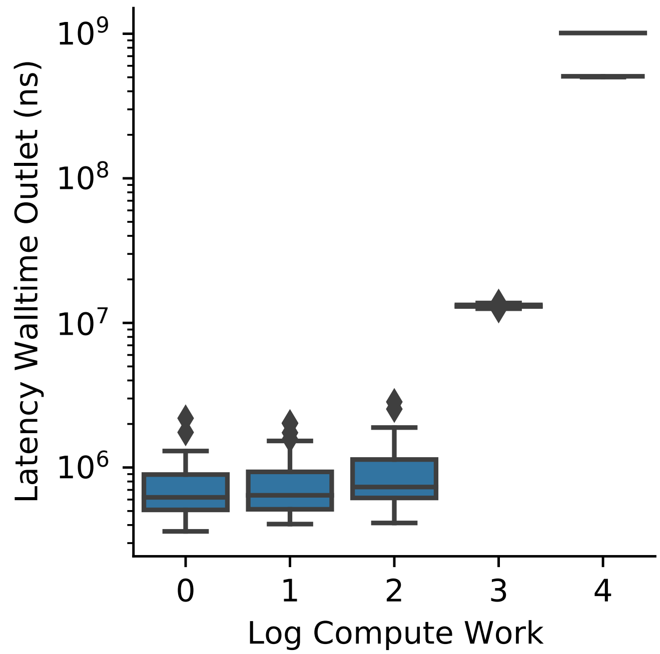
(a) TODO without outliers

(b) TODO without outliers

Fig. 27: computation vs communication Latency Simsteps Outlet TODO

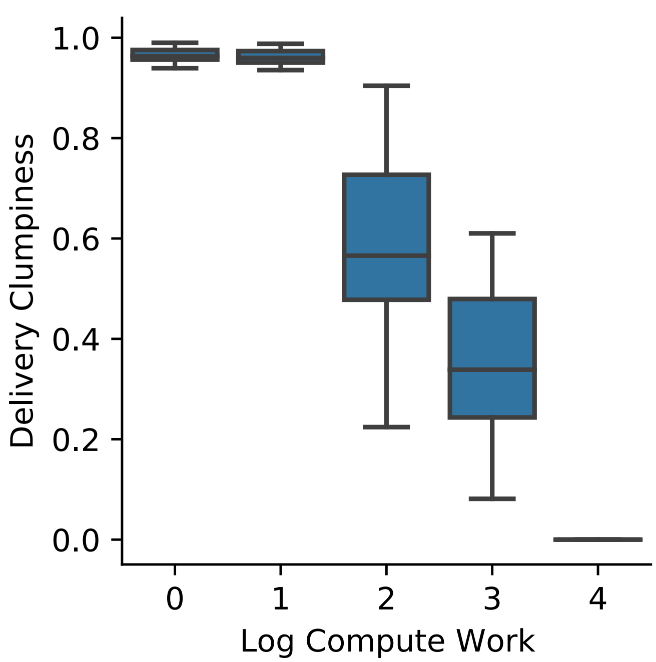


(a) TODO without outliers

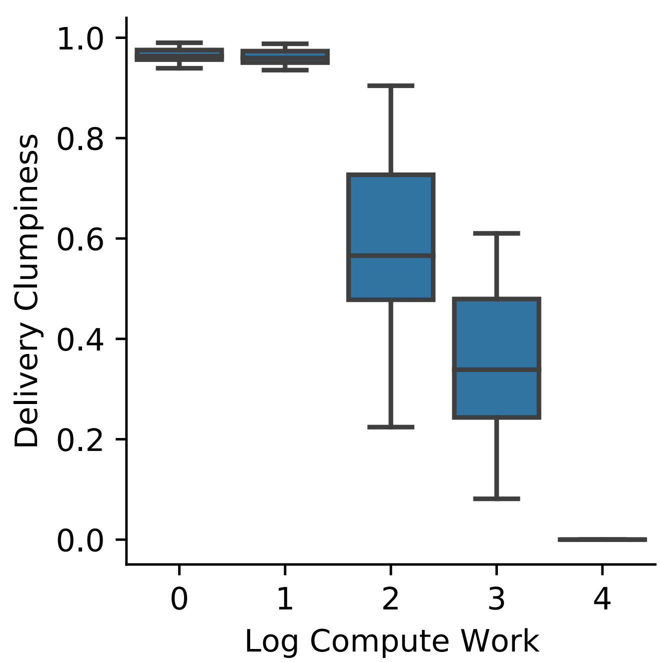


(b) TODO without outliers

Fig. 28: computation vs communication   Latency Walltime Outlet (ns)   TODO

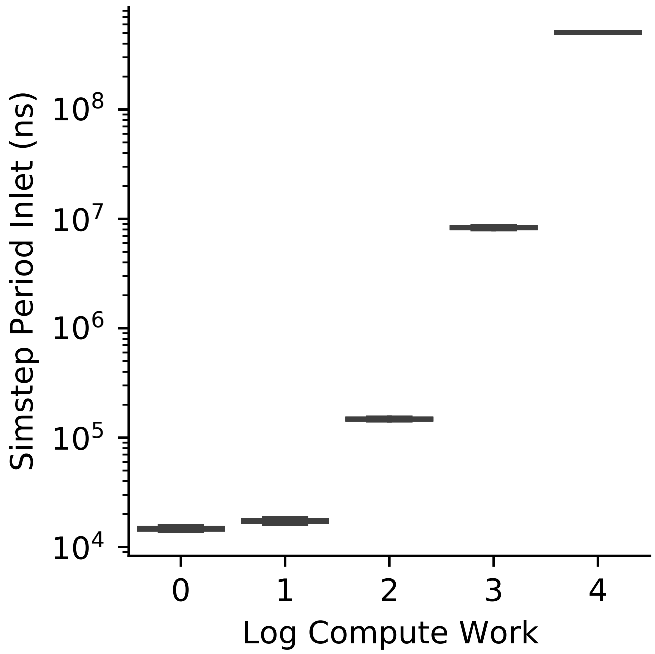


(a) TODO without outliers

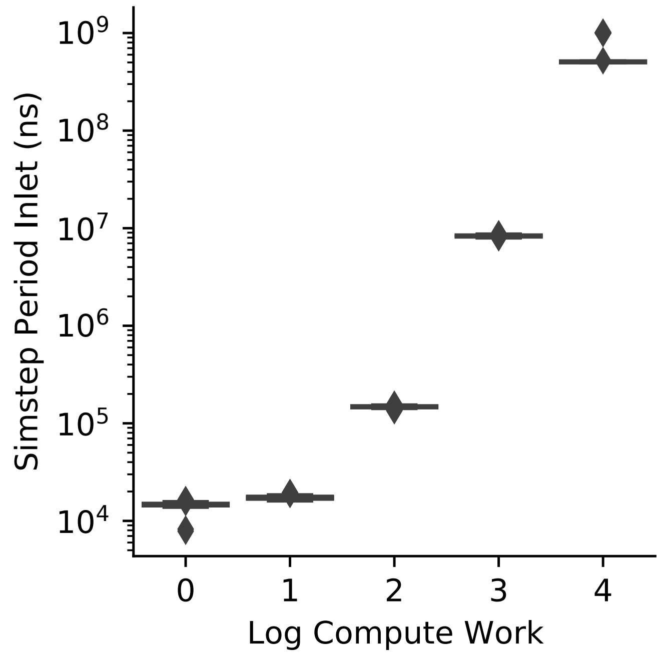


(b) TODO without outliers

Fig. 29: computation vs communication   Delivery Clumpiness   TODO

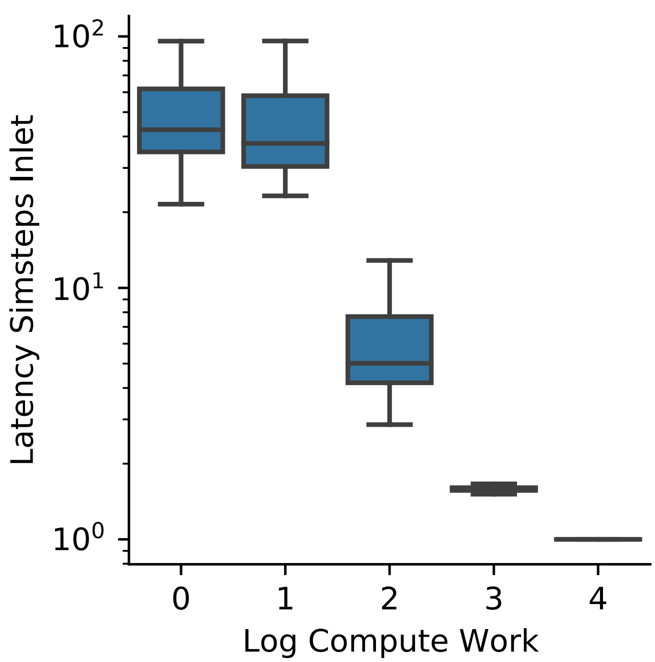


(a) TODO without outliers

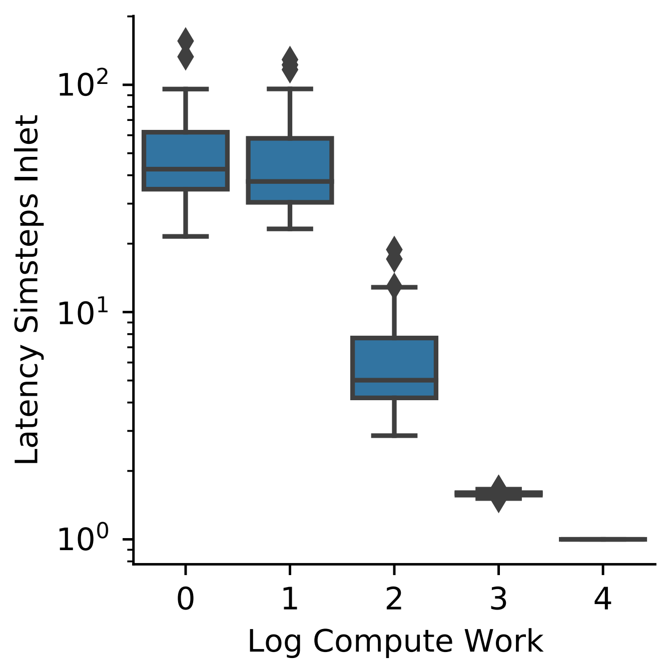


(b) TODO without outliers

Fig. 30: computation vs communication Simstep Period Inlet (ns) TODO

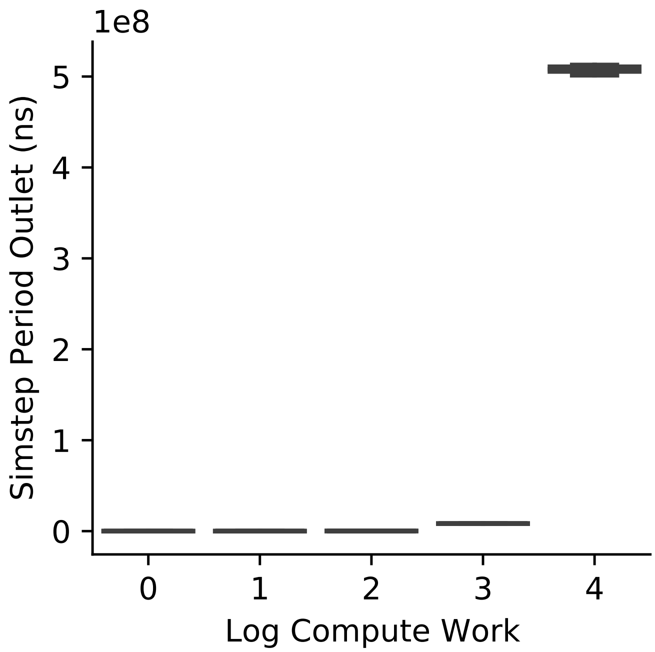


(a) TODO without outliers

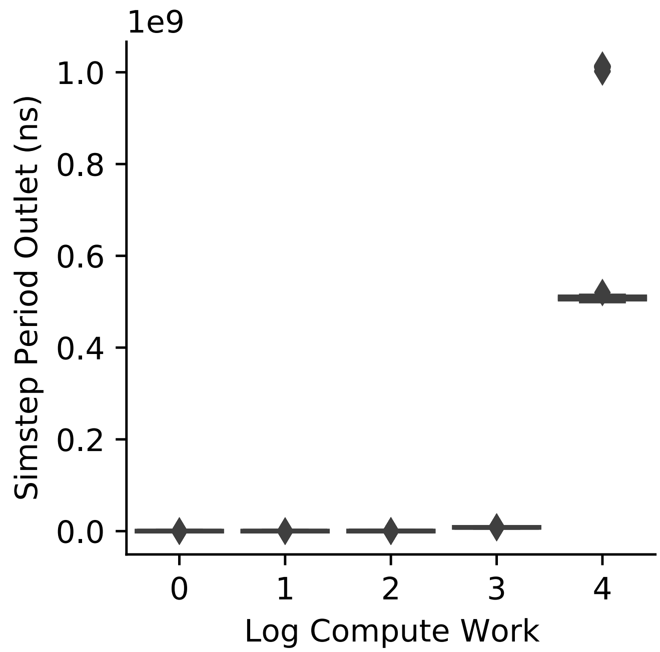


(b) TODO without outliers

Fig. 31: computation vs communication Latency Simsteps Inlet TODO

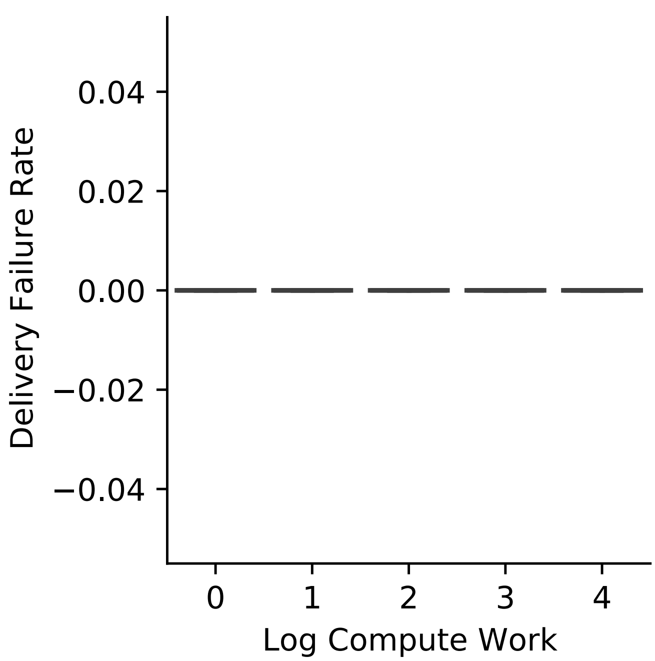


(a) TODO without outliers

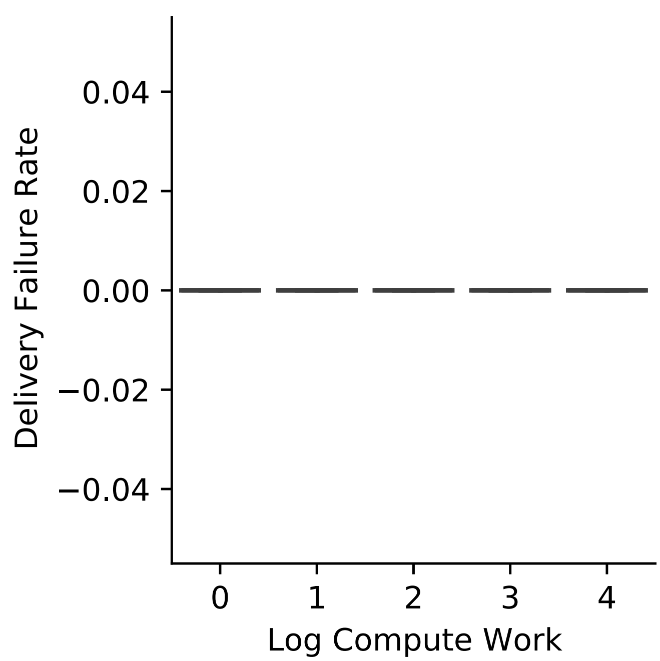


(b) TODO without outliers

Fig. 32: computation vs communication Simstep Period Outlet (ns) TODO

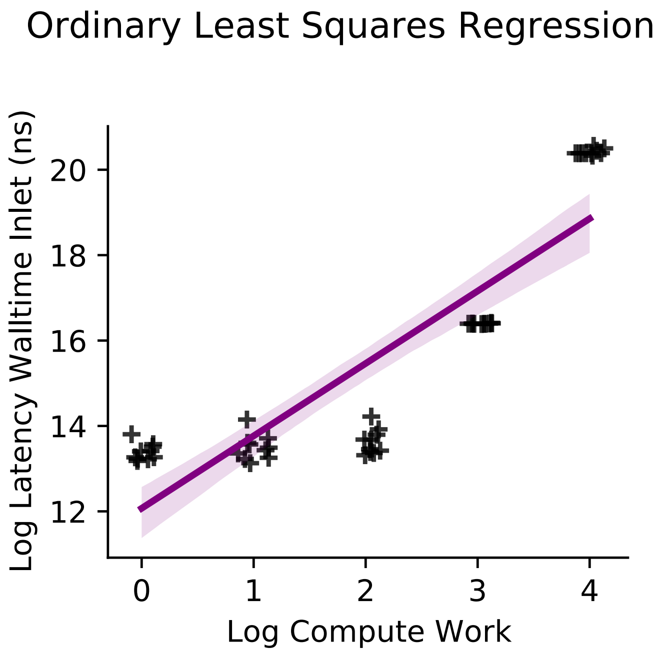


(a) TODO without outliers

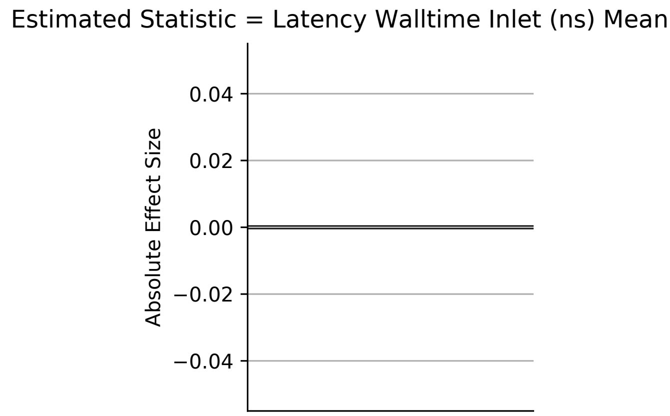


(b) TODO without outliers

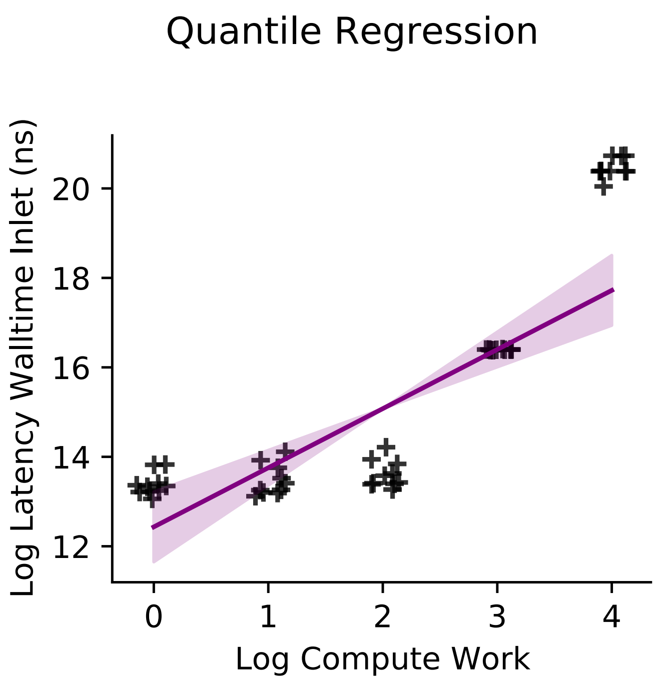
Fig. 33: computation vs communication Delivery Failure Rate TODO



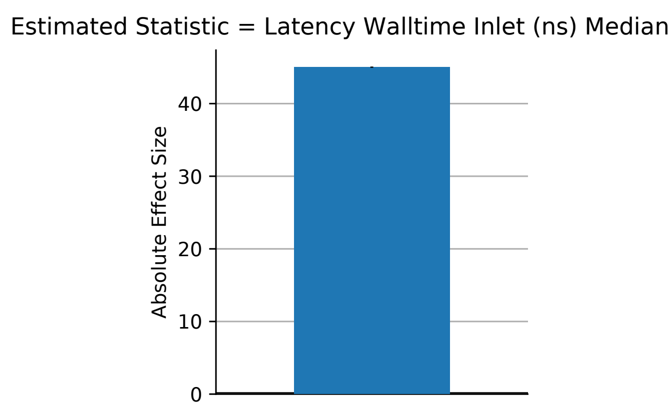
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

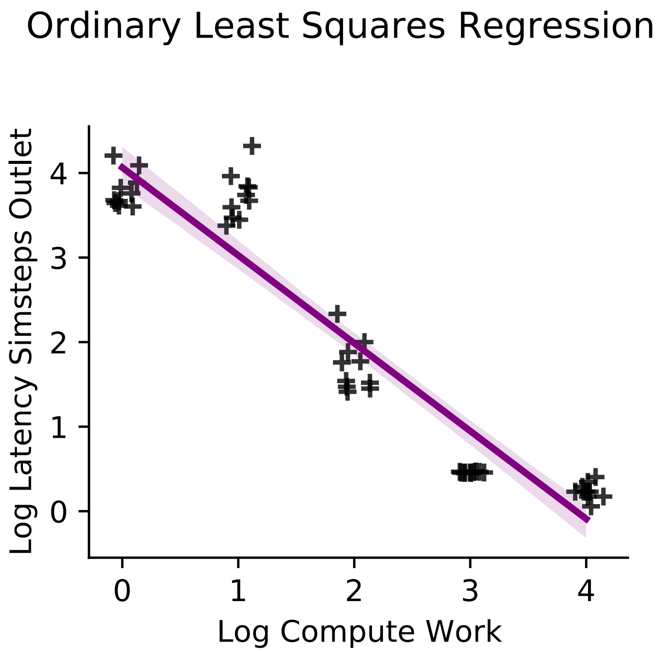


(c) TODO quantile regression

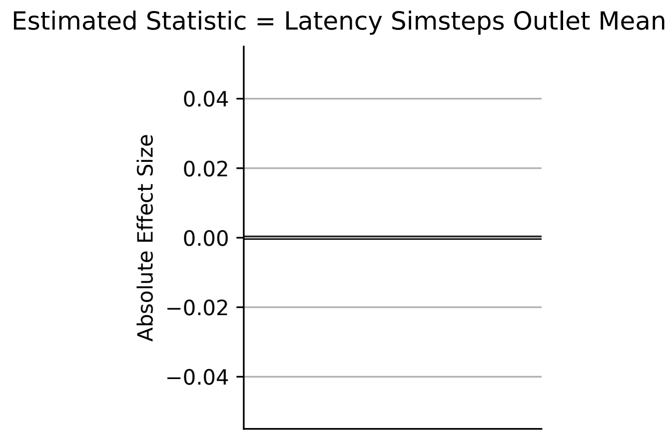


(d) TODO complete quantile regression effect size

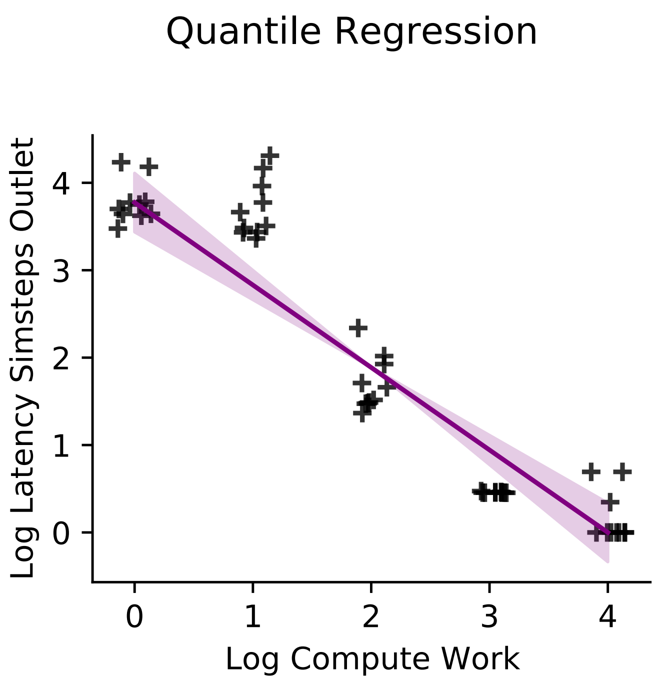
Fig. 34: computation vs communication   Latency Walltime Inlet (ns)   ordinary least squares regression to estimate mean and quantile regression to estimate median



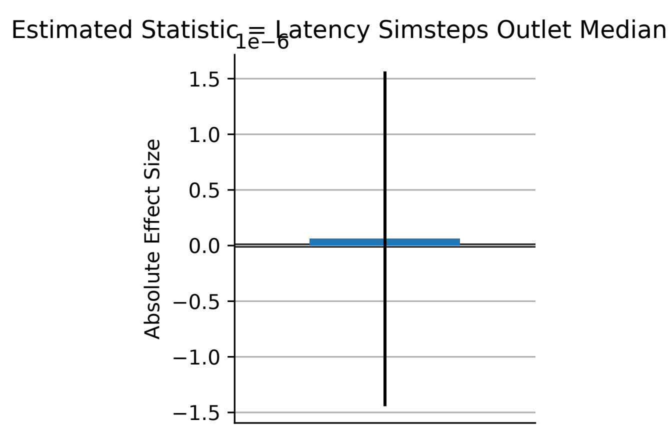
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

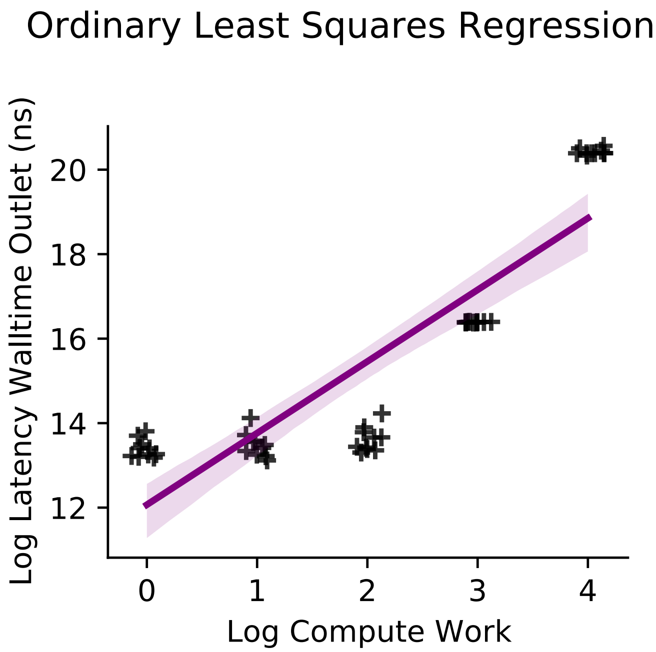


(c) TODO quantile regression

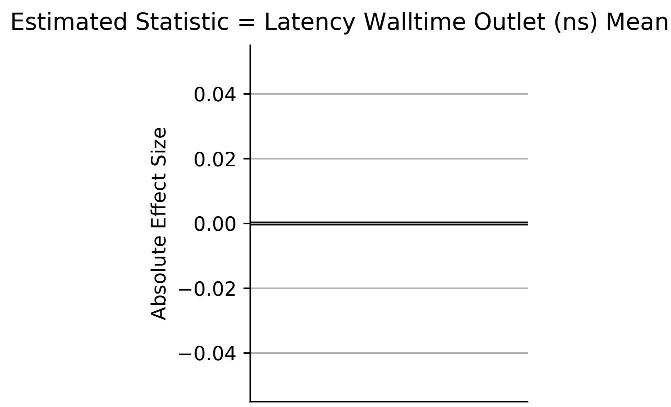


(d) TODO complete quantile regression effect size

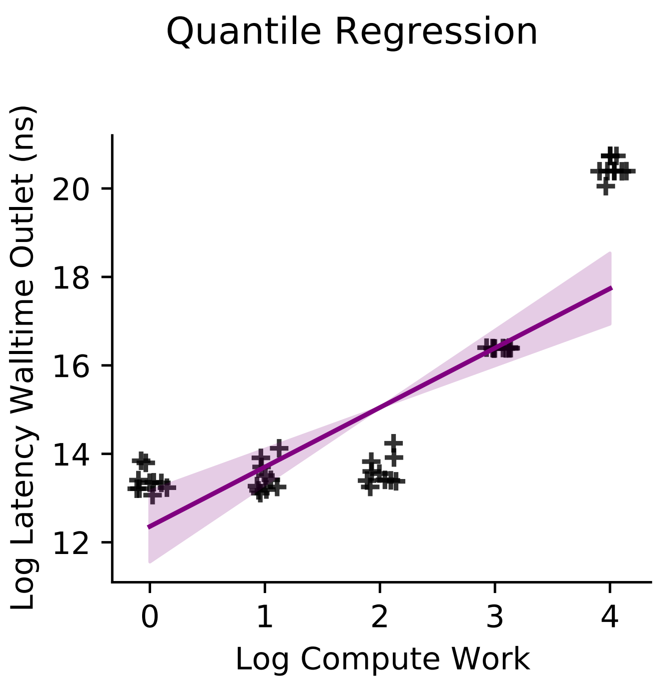
Fig. 35: computation vs communication Latency Simsteps Outlet ordinary least squares regression to estimate mean and quantile regression to estimate median



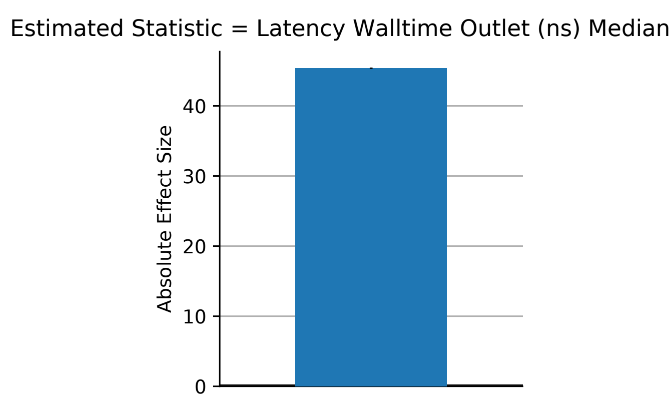
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

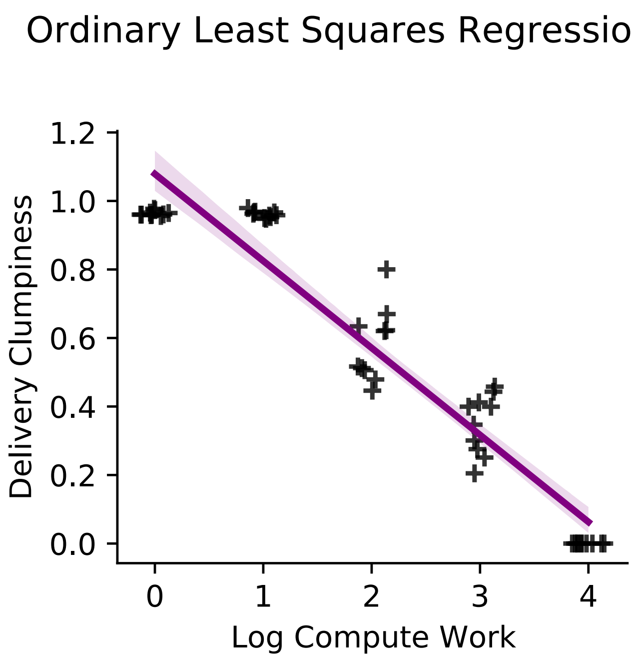


(c) TODO quantile regression

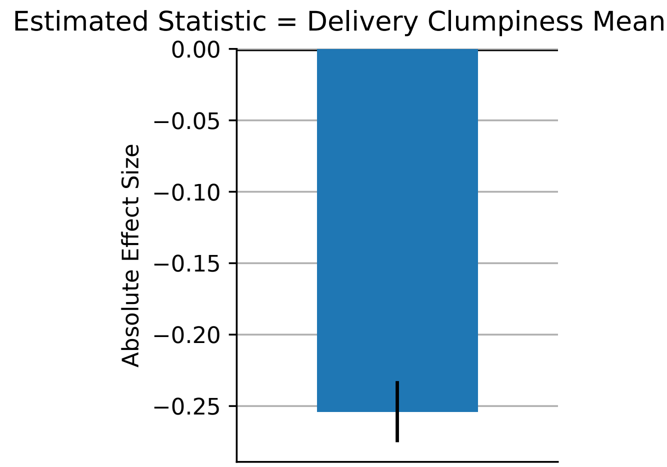


(d) TODO complete quantile regression effect size

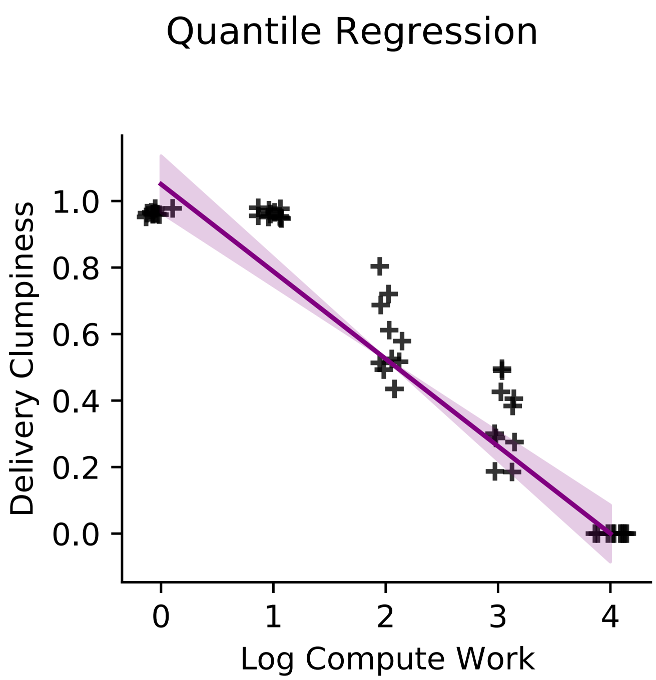
Fig. 36: computation vs communication Latency Walltime Outlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



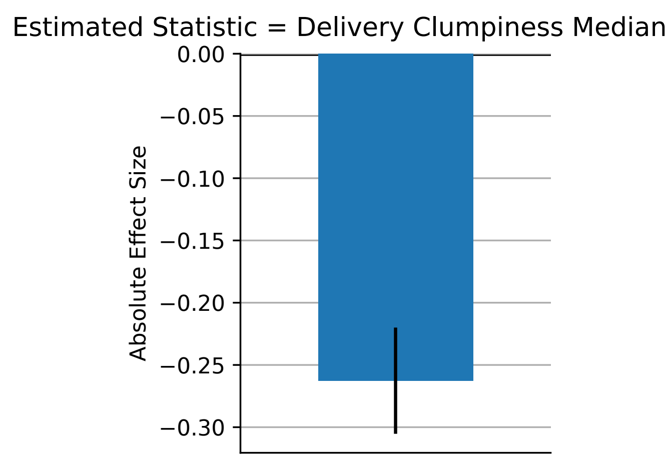
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

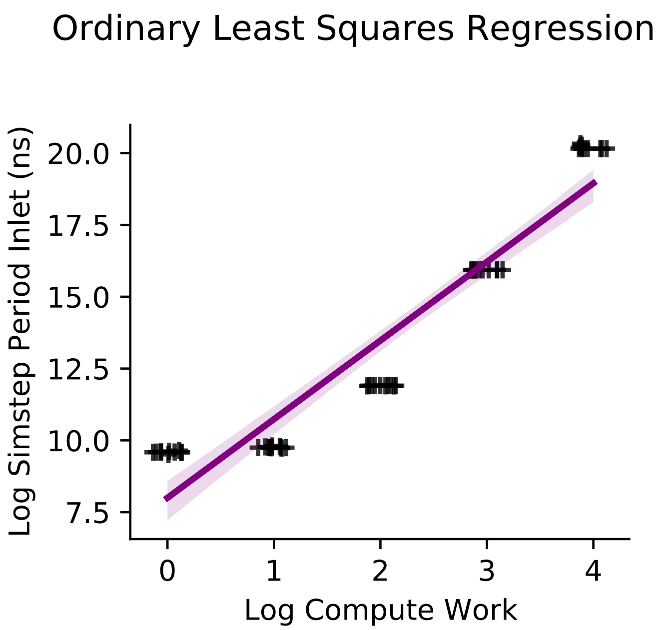


(c) TODO quantile regression

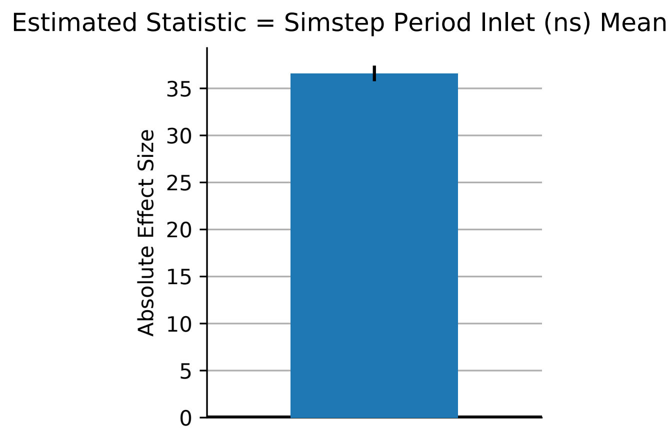


(d) TODO complete quantile regression effect size

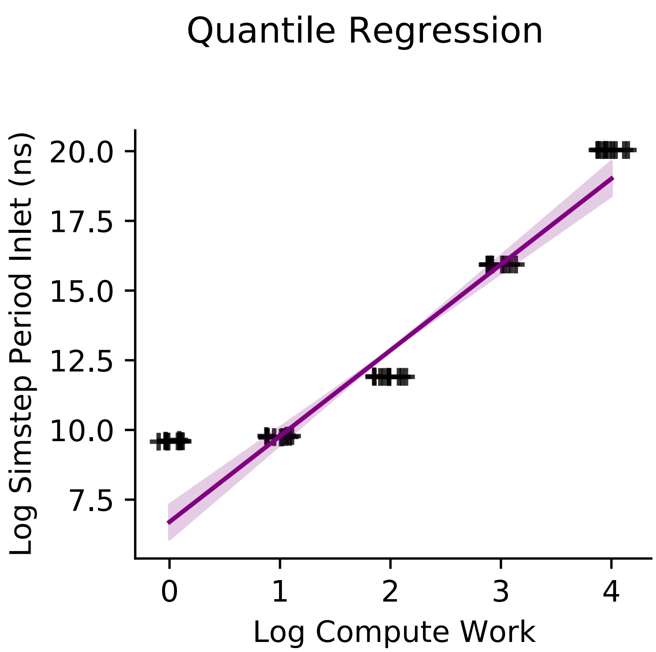
Fig. 37: computation vs communication Delivery Clumpiness ordinary least squares regression to estimate mean and quantile regression to estimate median



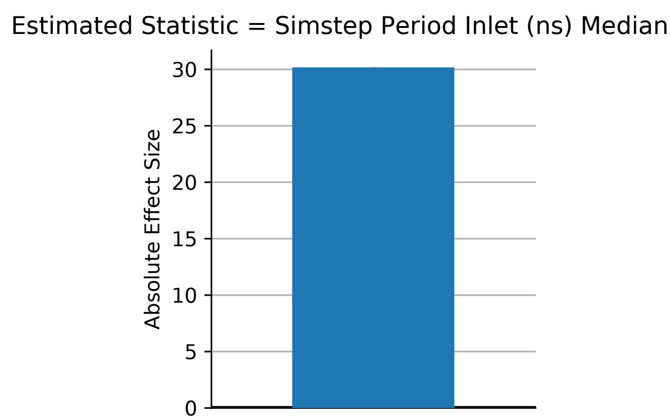
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

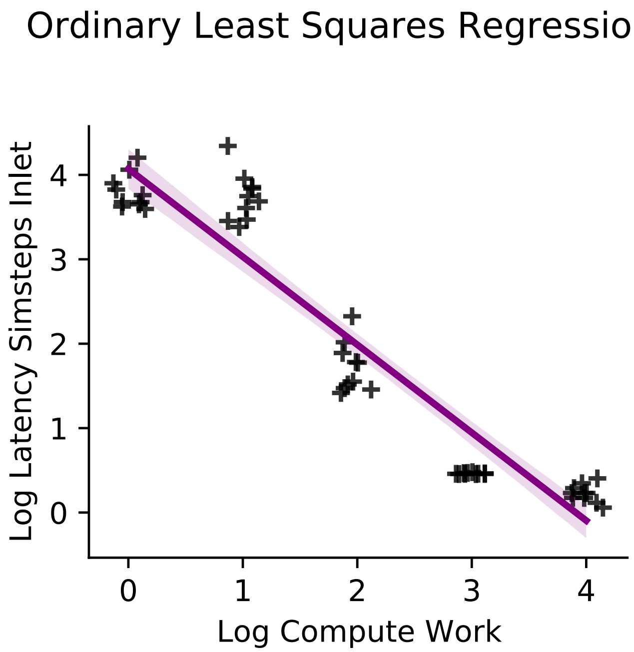


(c) TODO quantile regression

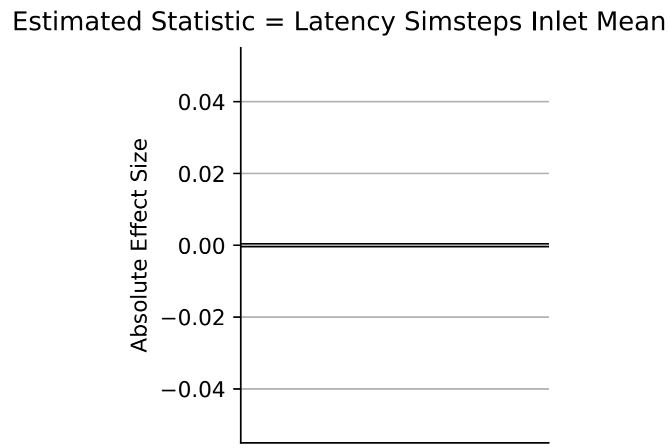


(d) TODO complete quantile regression effect size

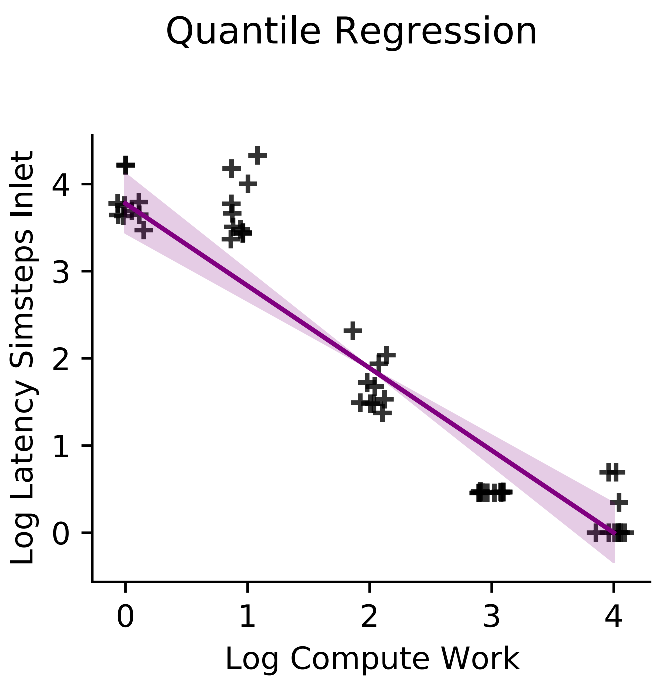
Fig. 38: computation vs communication Simstep Period Inlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



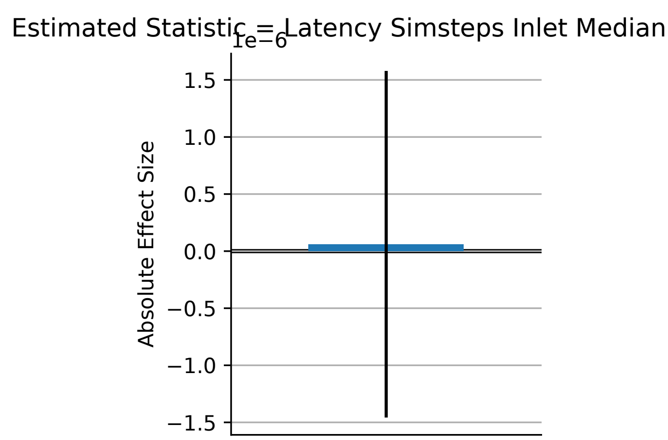
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

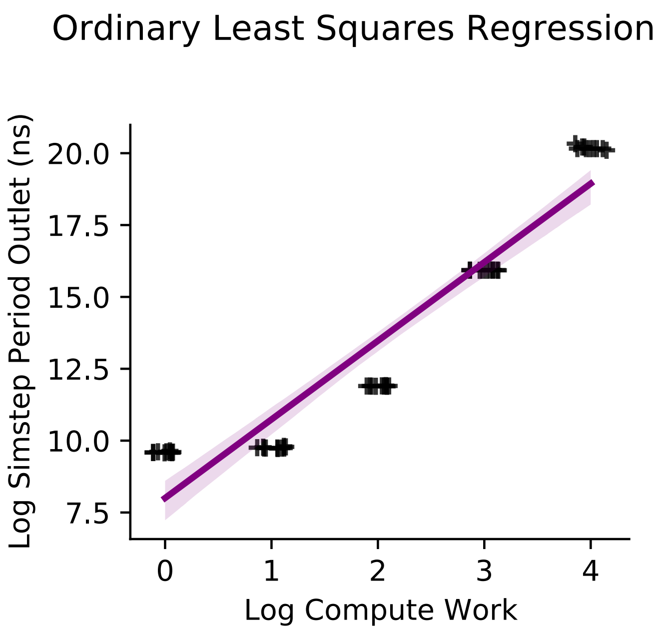


(c) TODO quantile regression

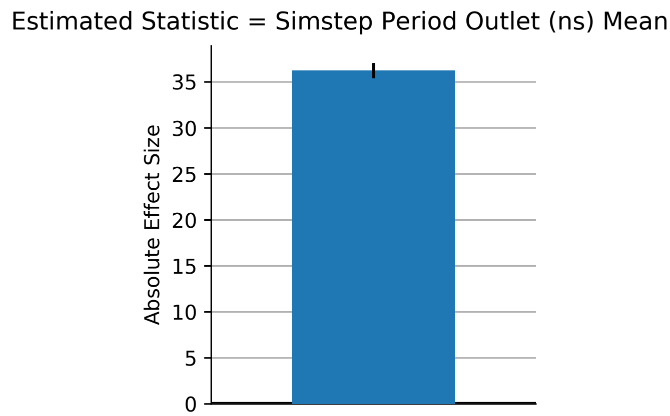


(d) TODO complete quantile regression effect size

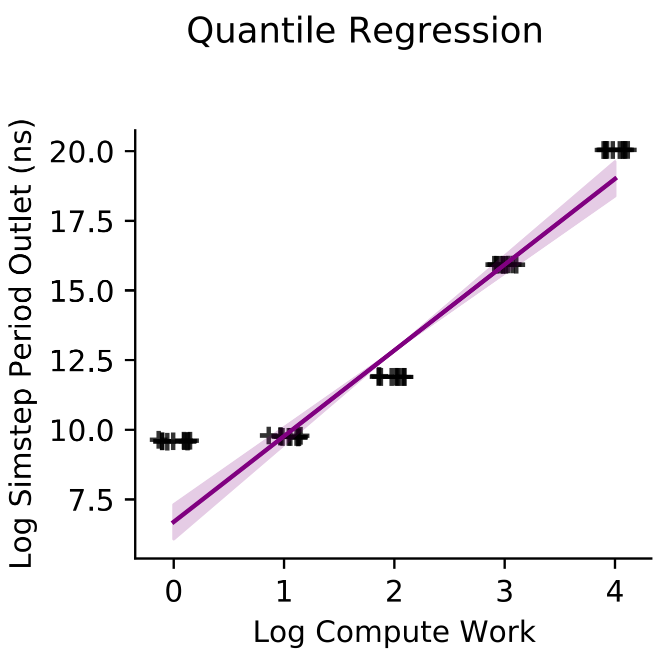
Fig. 39: computation vs communication Latency Simsteps Inlet ordinary least squares regression to estimate mean and quantile regression to estimate median



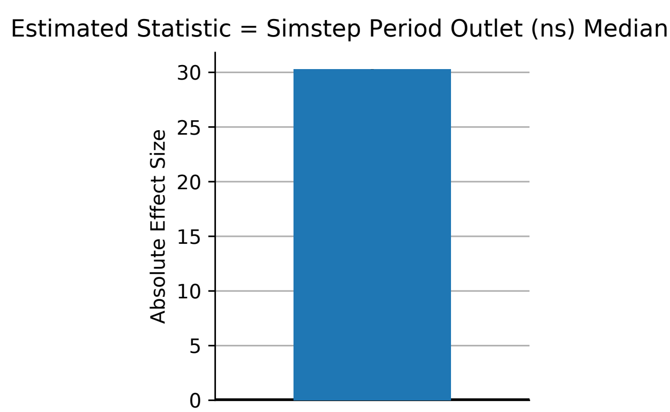
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

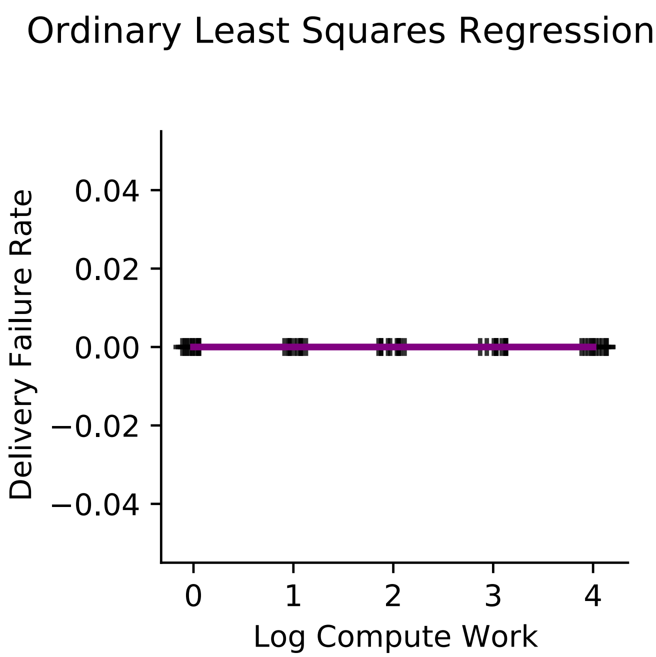


(c) TODO quantile regression

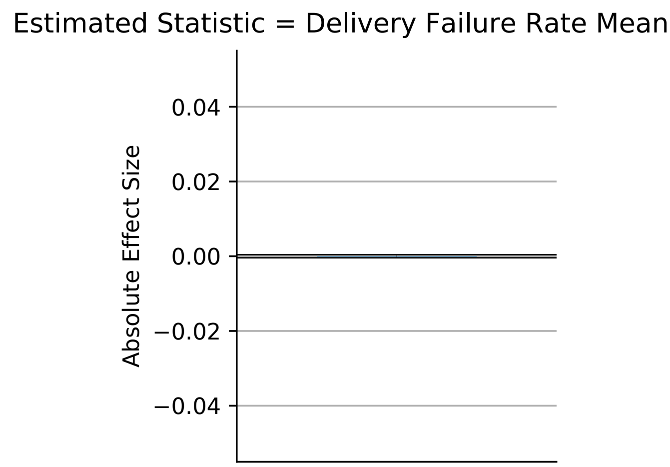


(d) TODO complete quantile regression effect size

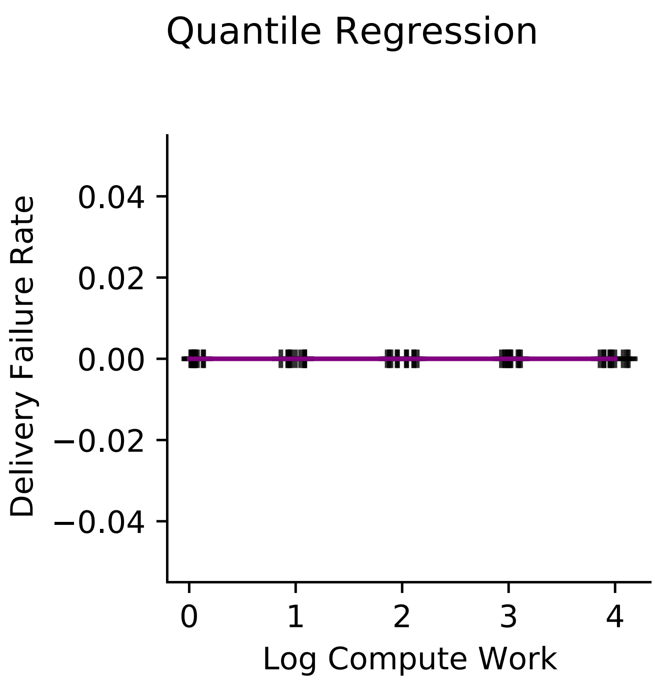
Fig. 40: computation vs communication   Simstep Period Outlet (ns)   ordinary least squares regression to estimate mean and quantile regression to estimate median



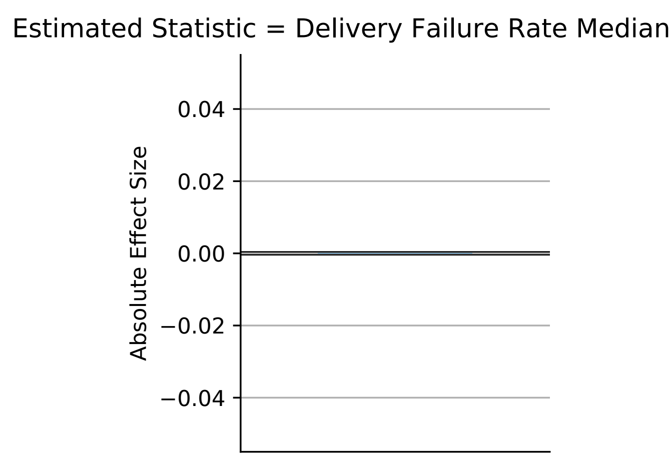
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

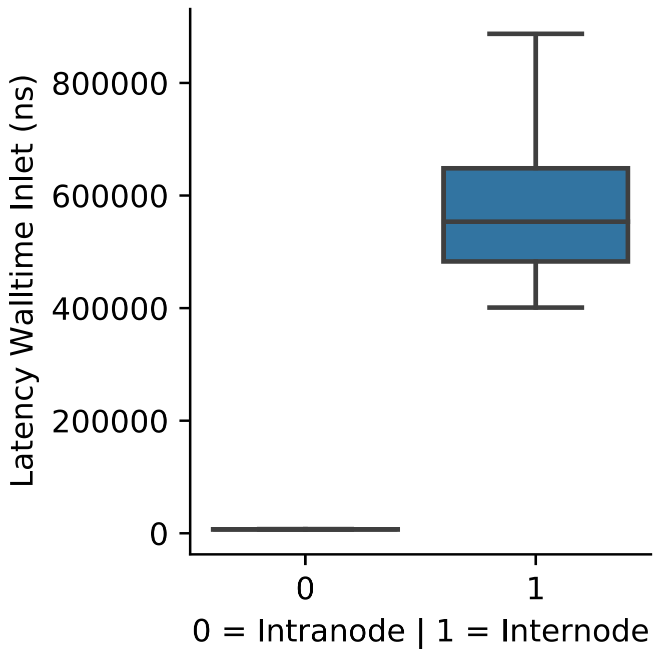


(c) TODO quantile regression

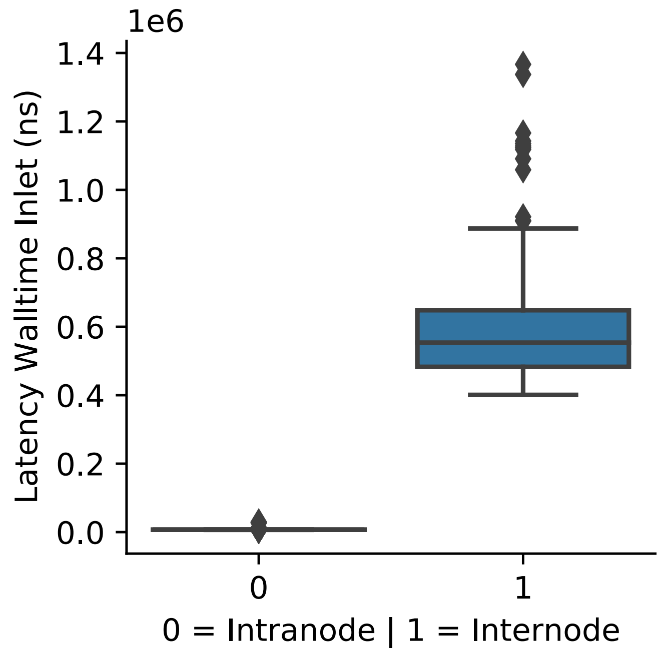


(d) TODO complete quantile regression effect size

Fig. 41: computation vs communication Delivery Failure Rate ordinary least squares regression to estimate mean and quantile regression to estimate median

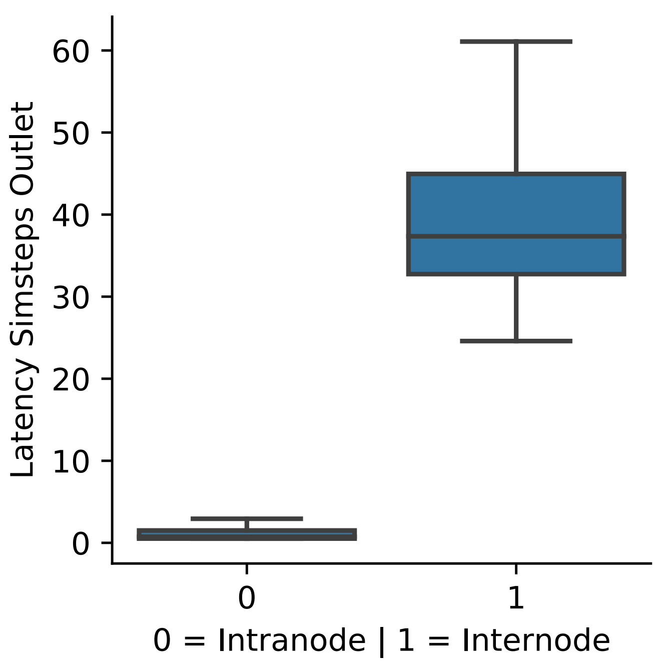


(a) TODO without outliers

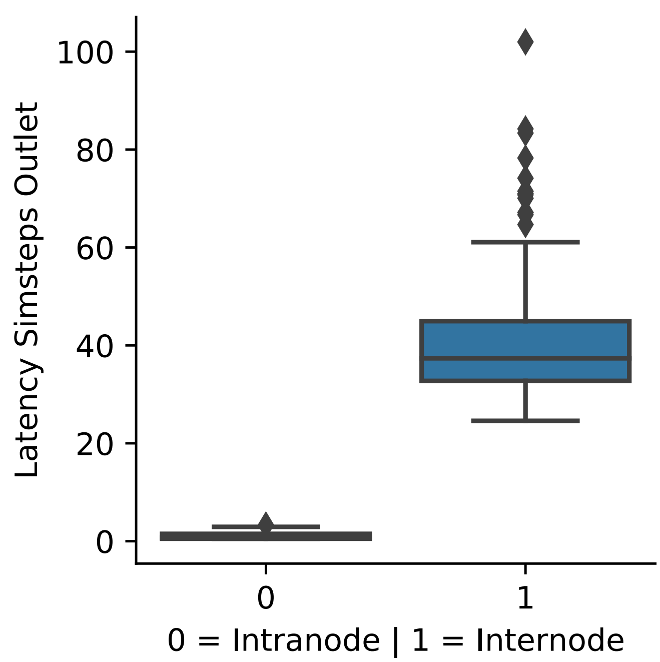


(b) TODO without outliers

Fig. 42: intranode vs internode Latency Walltime Inlet (ns) TODO

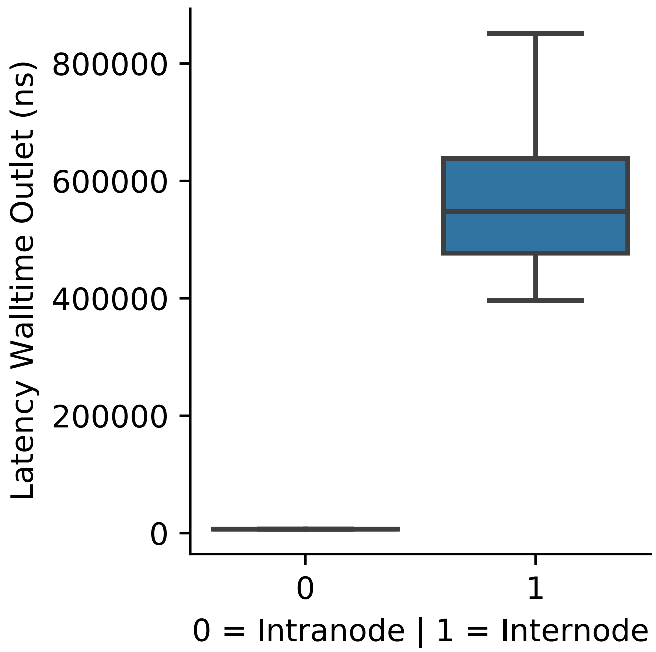


(a) TODO without outliers

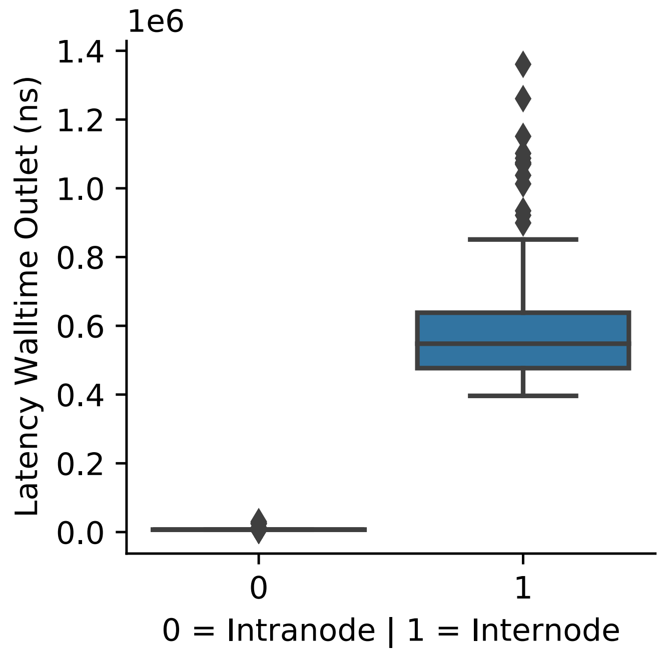


(b) TODO without outliers

Fig. 43: intranode vs internode Latency Simsteps Outlet TODO

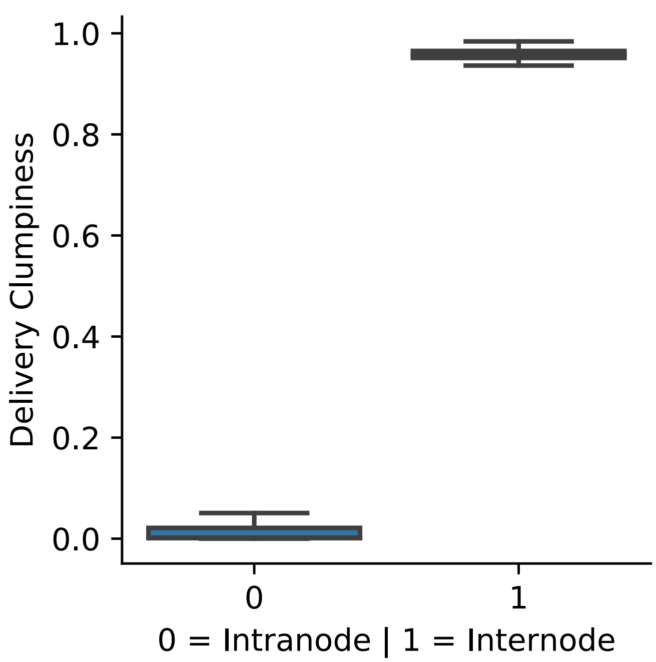


(a) TODO without outliers

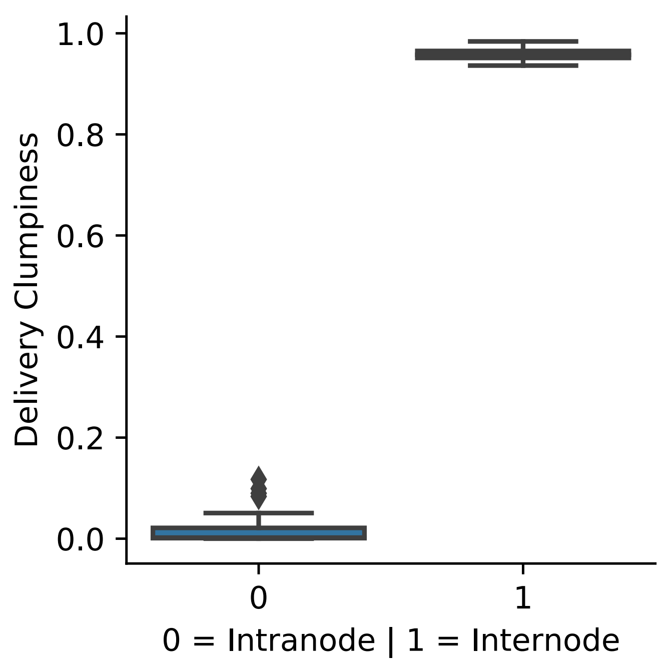


(b) TODO without outliers

Fig. 44: intranode vs internode Latency Walltime Outlet (ns) TODO

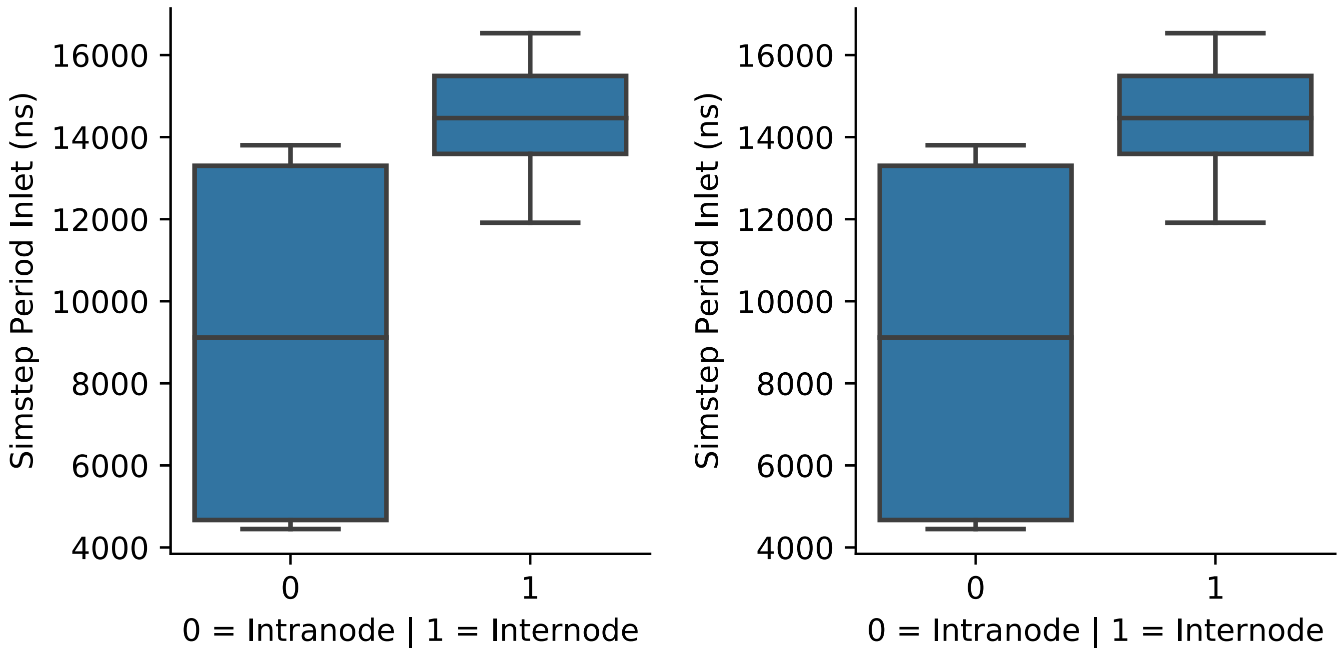


(a) TODO without outliers



(b) TODO without outliers

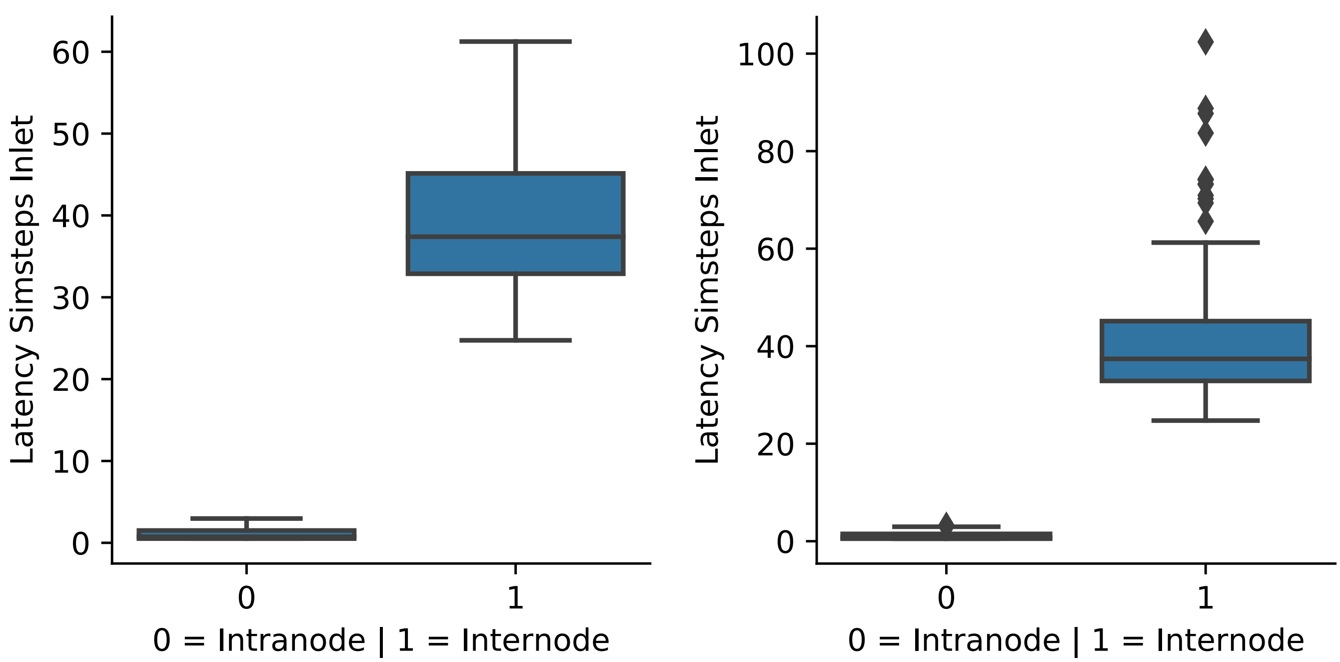
Fig. 45: intranode vs internode Delivery Clumpiness TODO



(a) TODO without outliers

(b) TODO without outliers

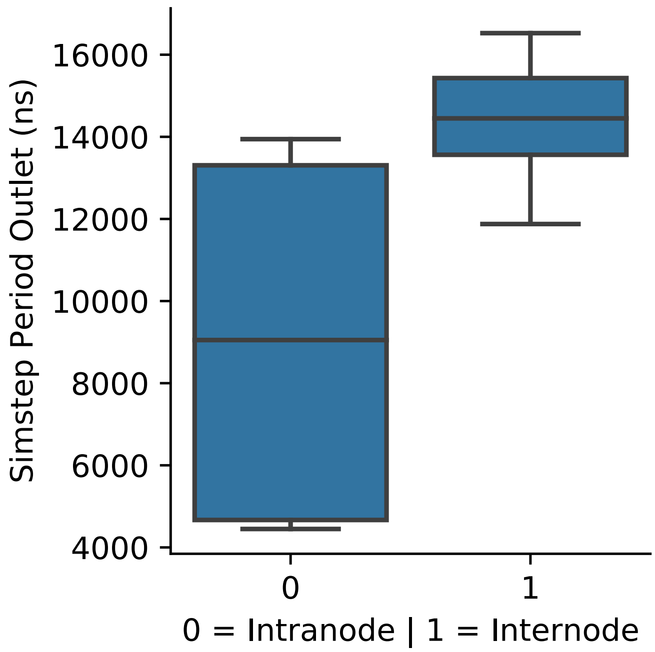
Fig. 46: intranode vs internode Simstep Period Inlet (ns) TODO



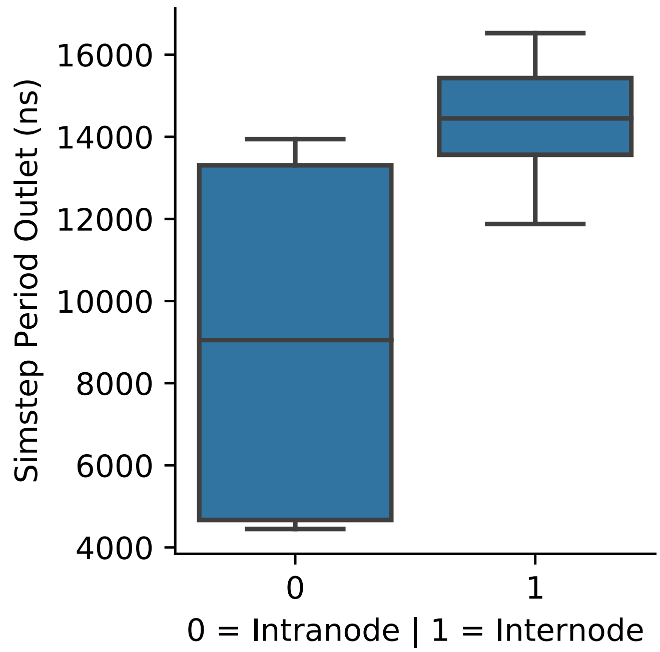
(a) TODO without outliers

(b) TODO without outliers

Fig. 47: intranode vs internode Latency Simsteps Inlet TODO

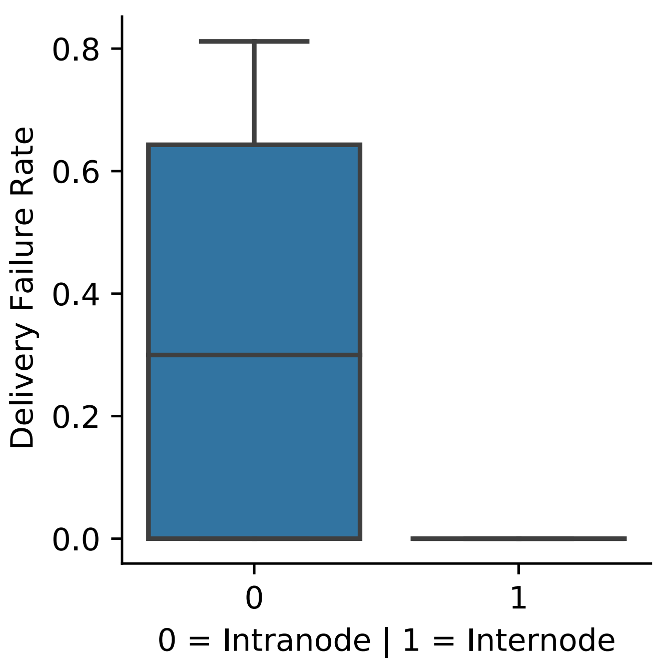


(a) TODO without outliers

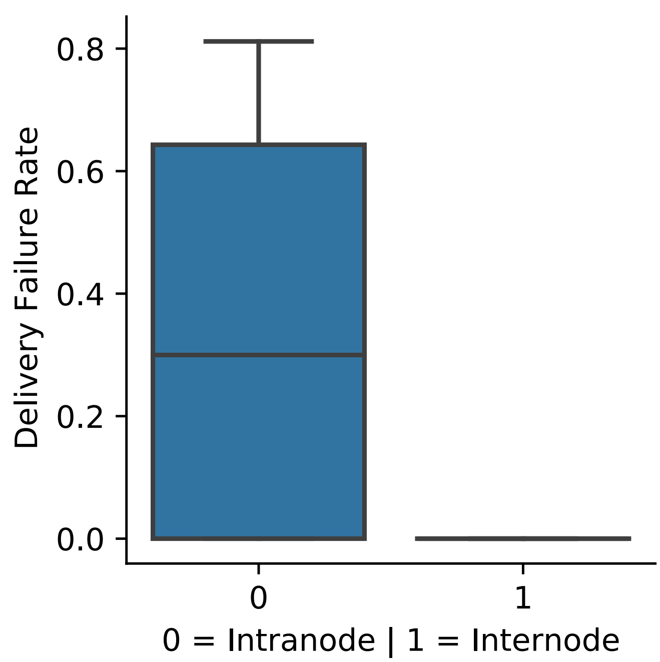


(b) TODO without outliers

Fig. 48: intranode vs internode Simstep Period Outlet (ns) TODO

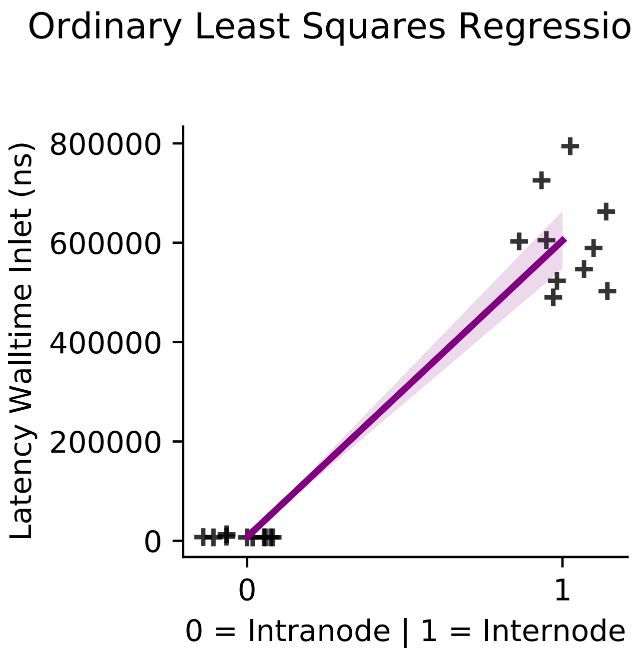


(a) TODO without outliers

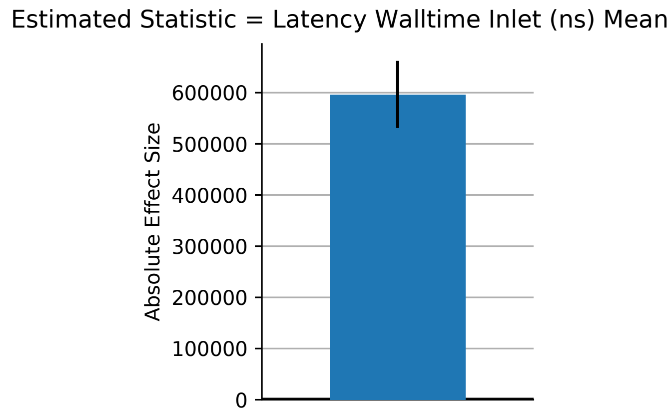


(b) TODO without outliers

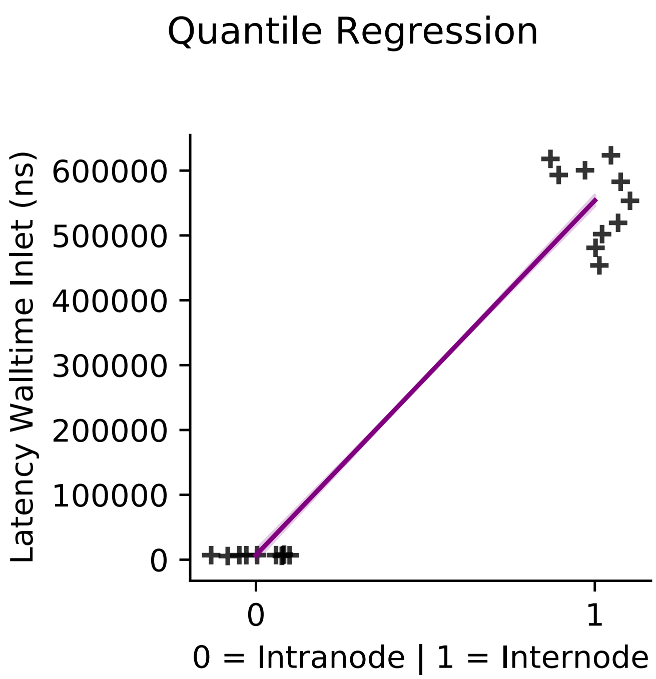
Fig. 49: intranode vs internode Delivery Failure Rate TODO



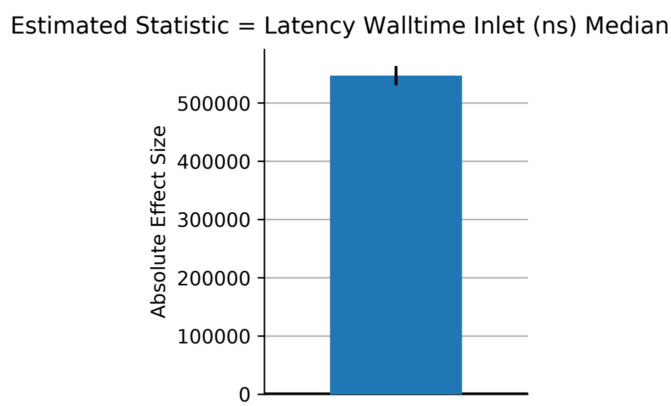
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

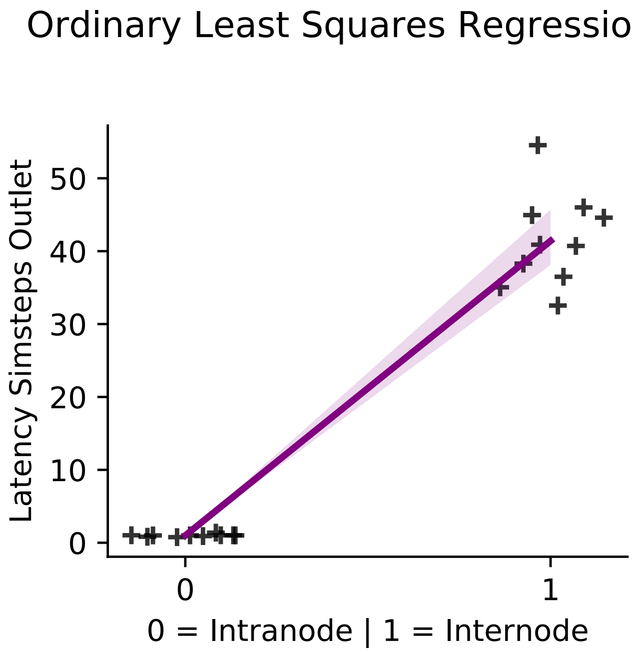


(c) TODO quantile regression

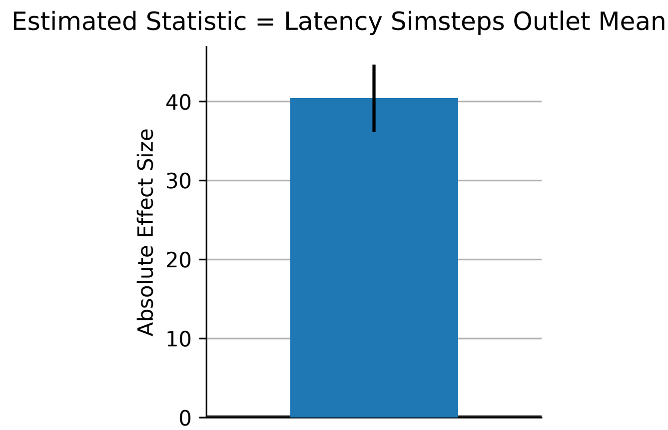


(d) TODO complete quantile regression effect size

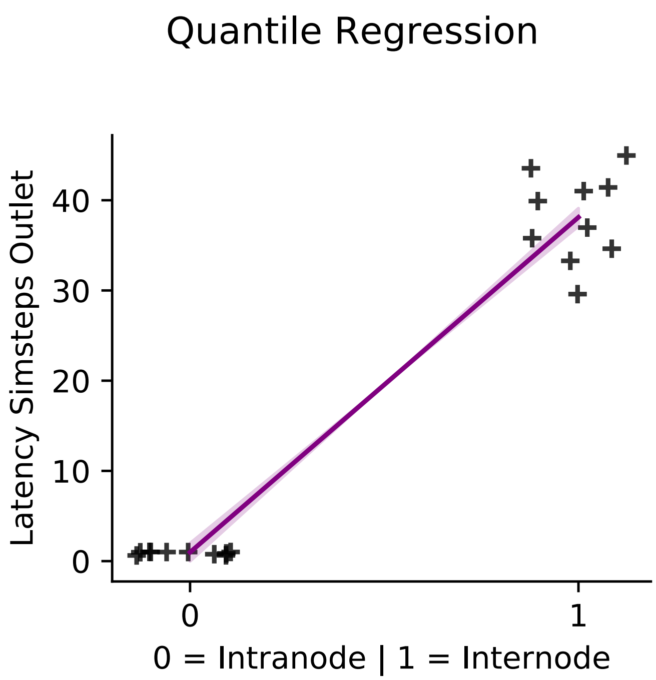
Fig. 50: computation vs communication Latency Walltime Inlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



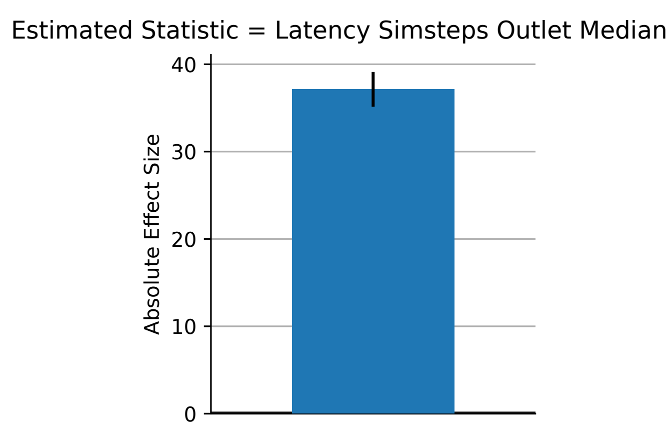
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

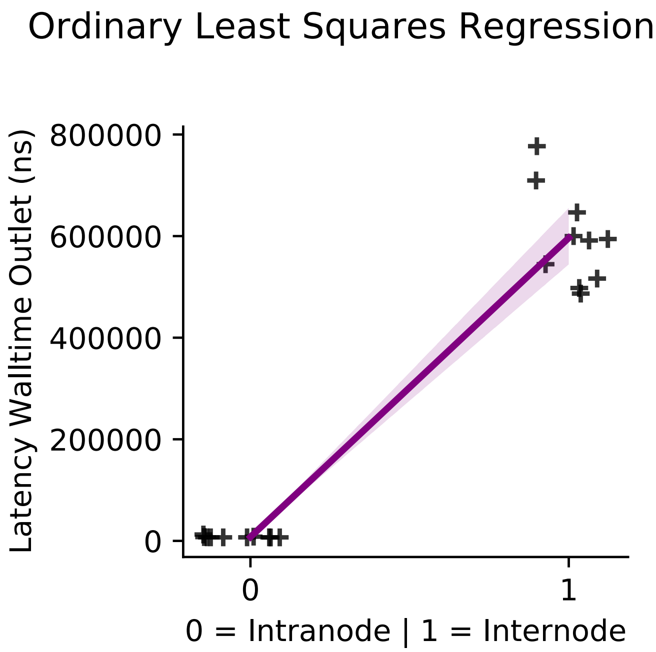


(c) TODO quantile regression

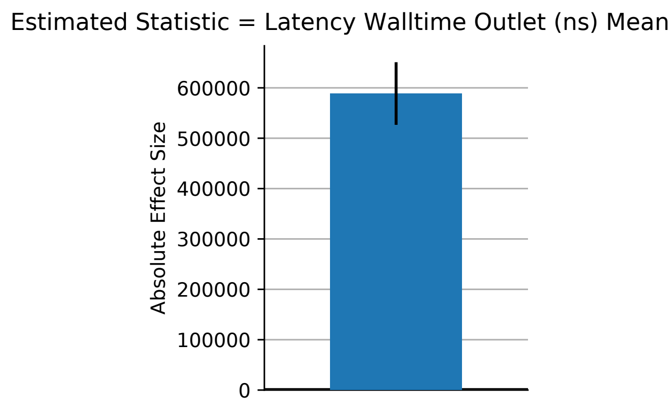


(d) TODO complete quantile regression effect size

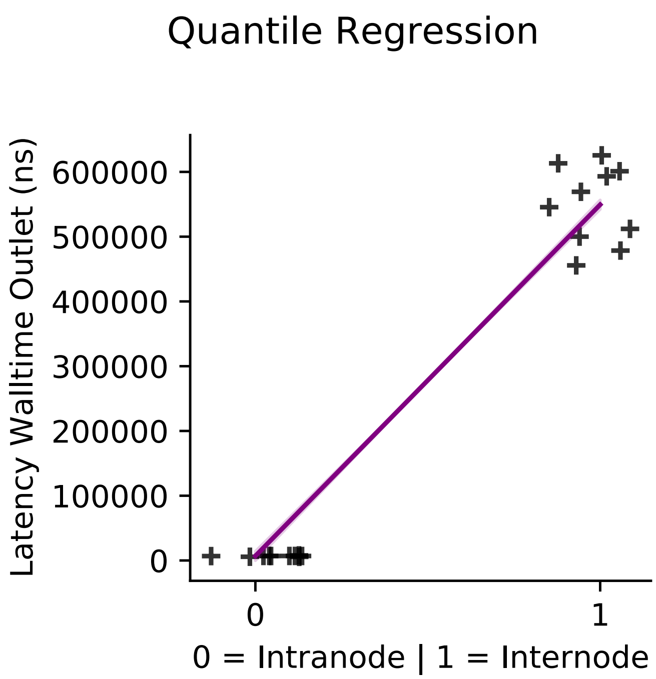
Fig. 51: computation vs communication Latency Simsteps Outlet ordinary least squares regression to estimate mean and quantile regression to estimate median



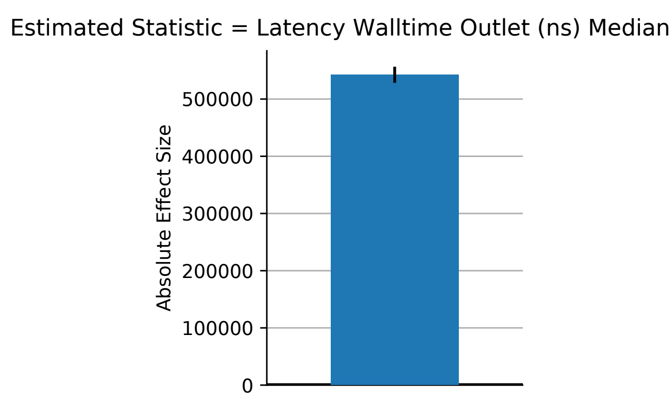
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

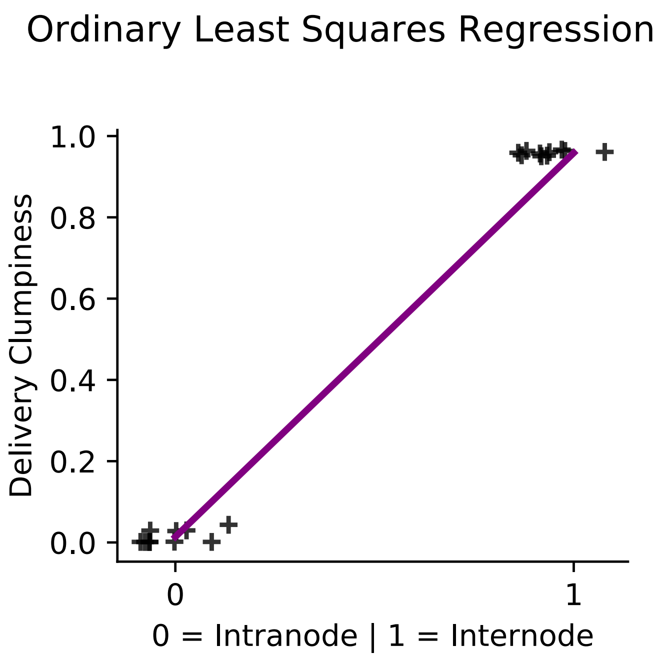


(c) TODO quantile regression

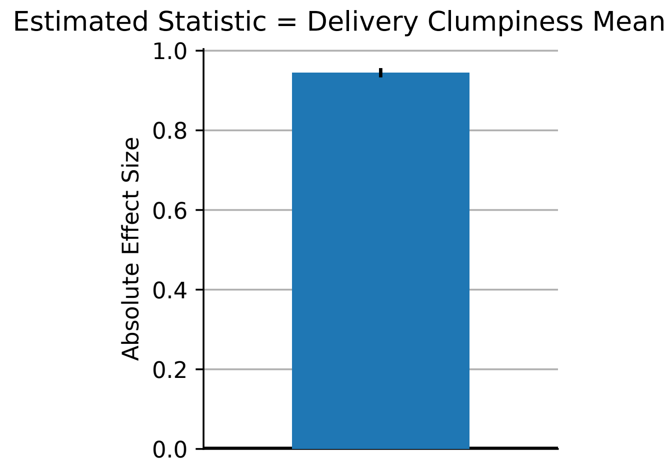


(d) TODO complete quantile regression effect size

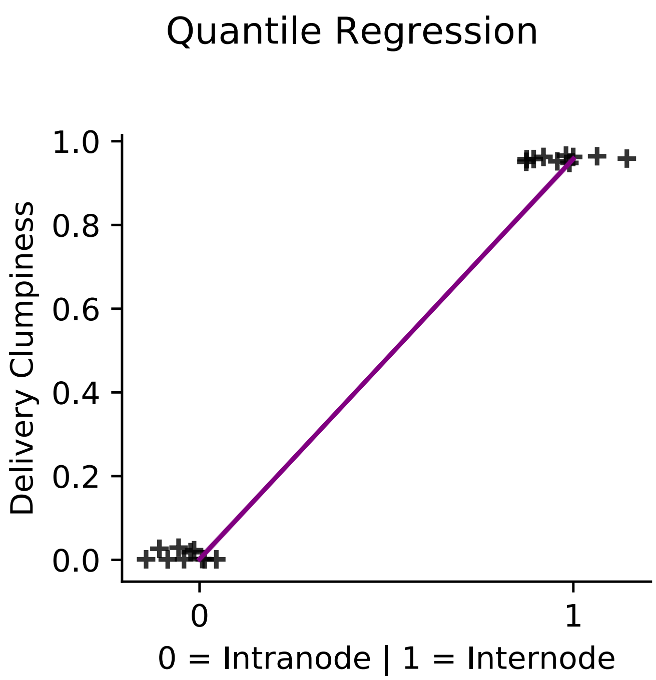
Fig. 52: computation vs communication Latency Walltime Outlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



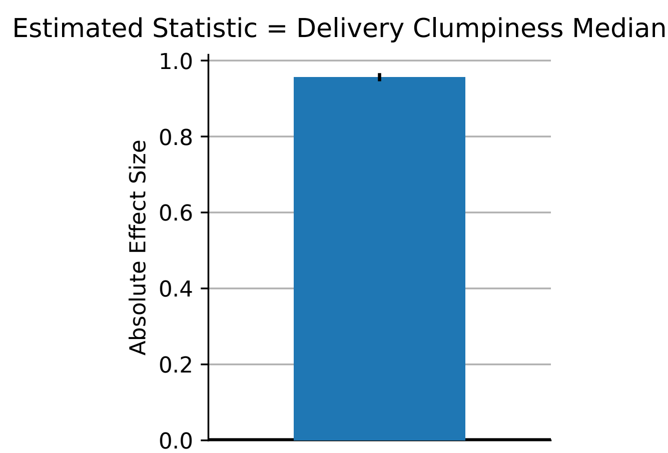
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

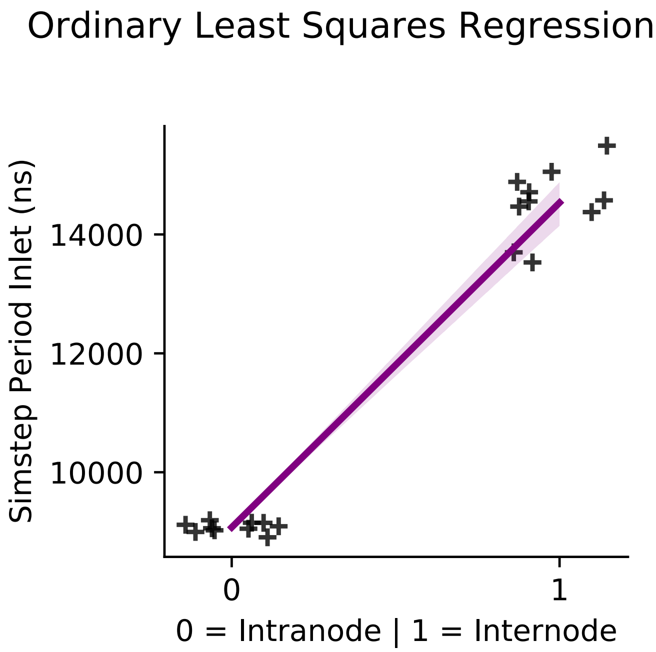


(c) TODO quantile regression

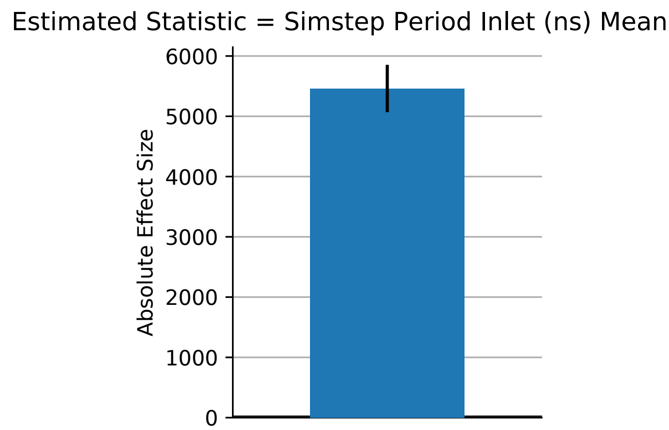


(d) TODO complete quantile regression effect size

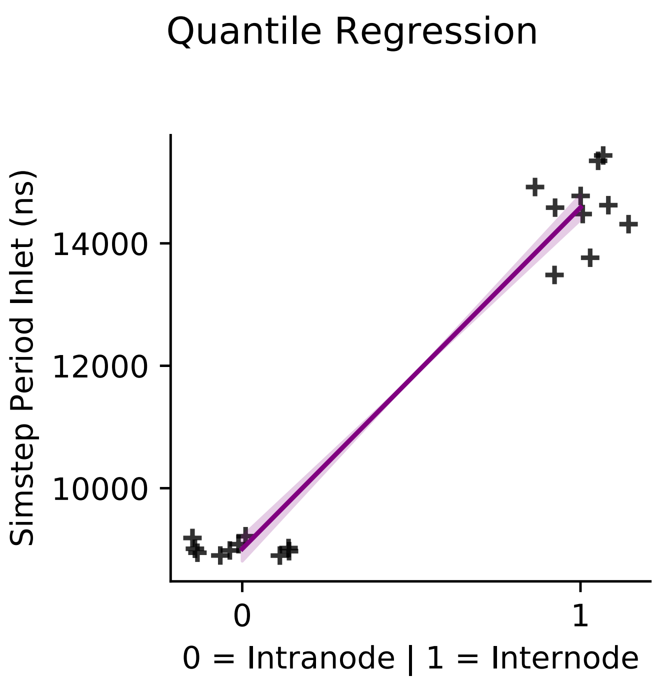
Fig. 53: computation vs communication   Delivery Clumpiness ordinary least squares regression to estimate mean and quantile regression to estimate median



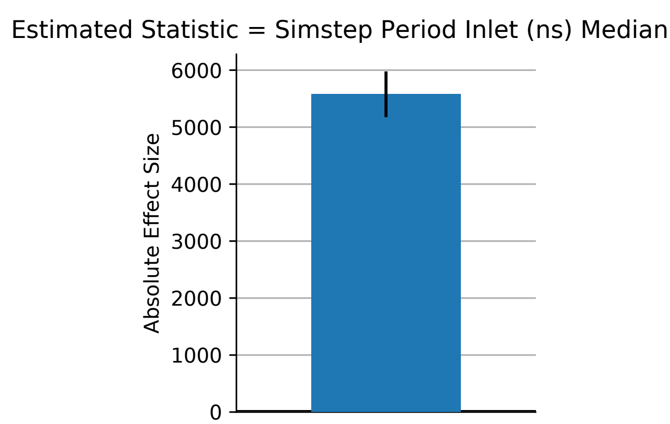
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

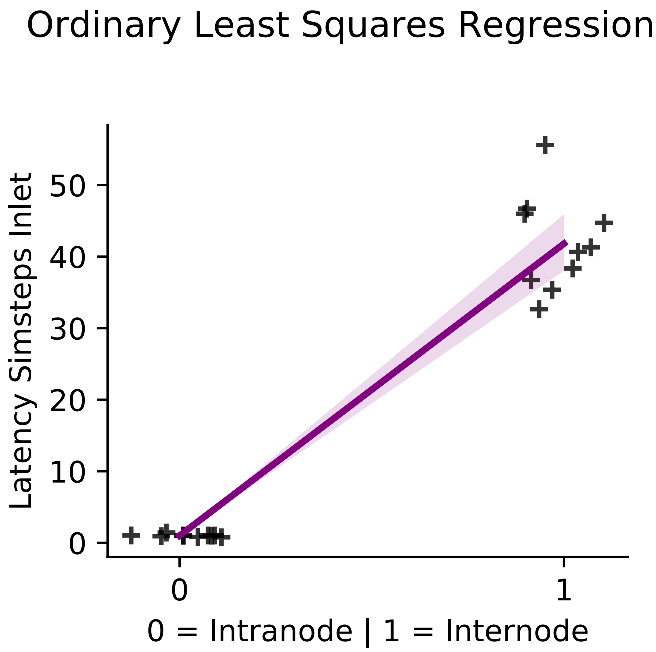


(c) TODO quantile regression

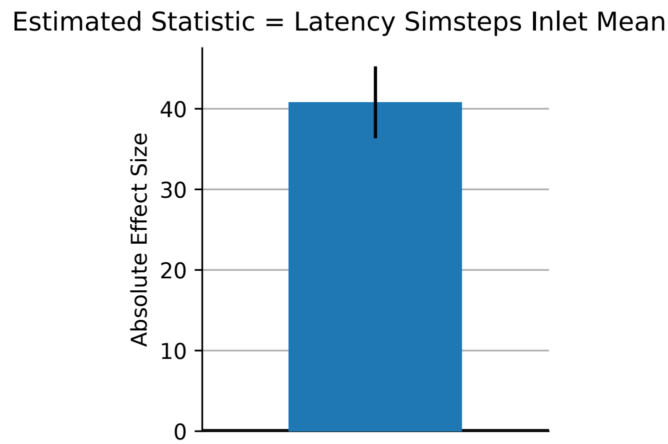


(d) TODO complete quantile regression effect size

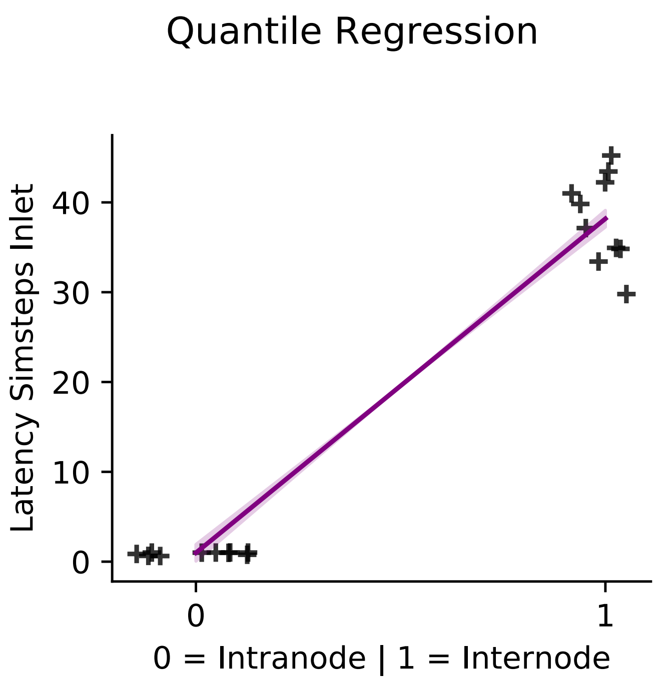
Fig. 54: computation vs communication Simstep Period Inlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



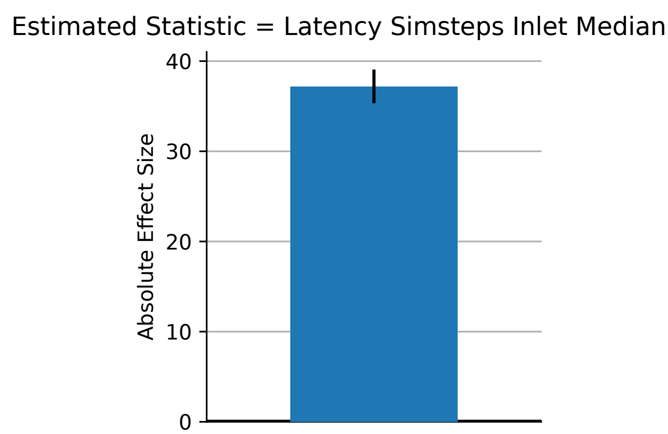
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

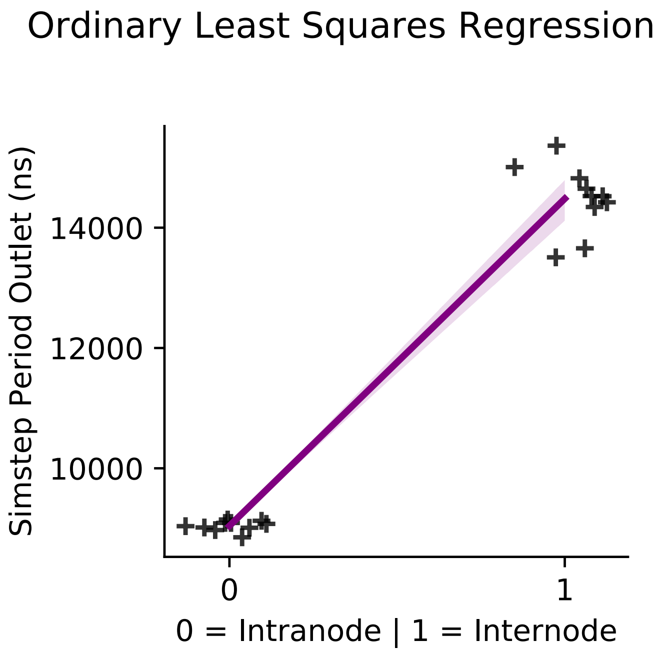


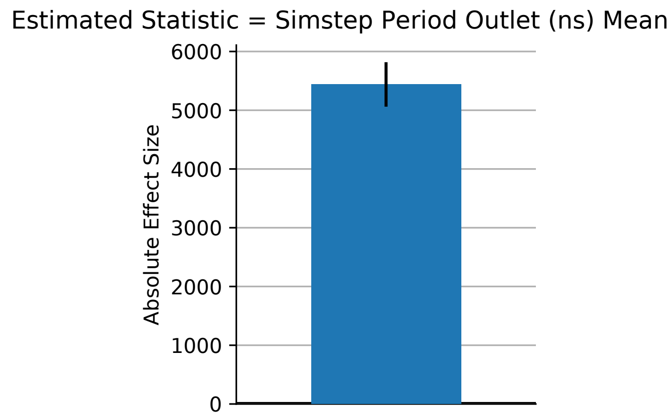
(c) TODO quantile regression



(d) TODO complete quantile regression effect size

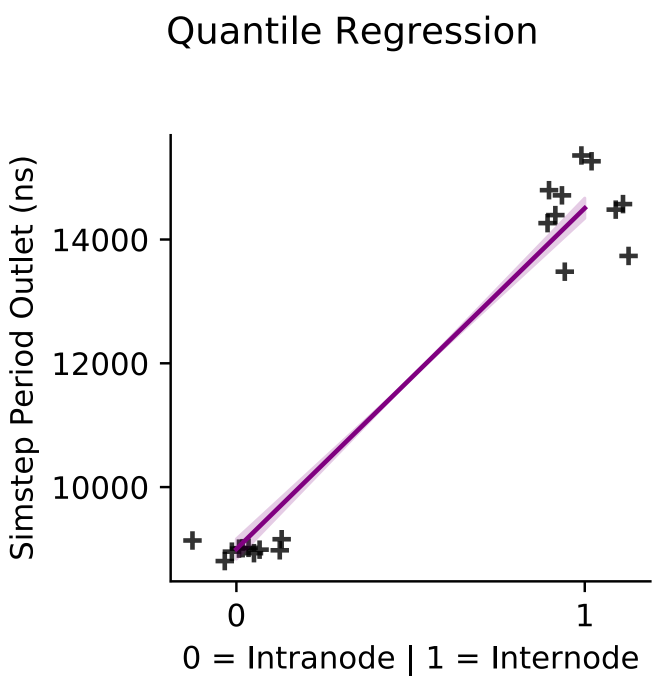
Fig. 55: computation vs communication Latency Simsteps Inlet ordinary least squares regression to estimate mean and quantile regression to estimate median

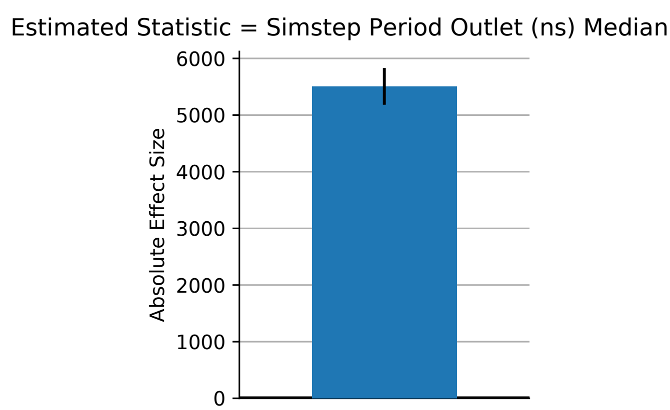




(a) TODO complete ordinary regression

(b) TODO complete ols regression effect size

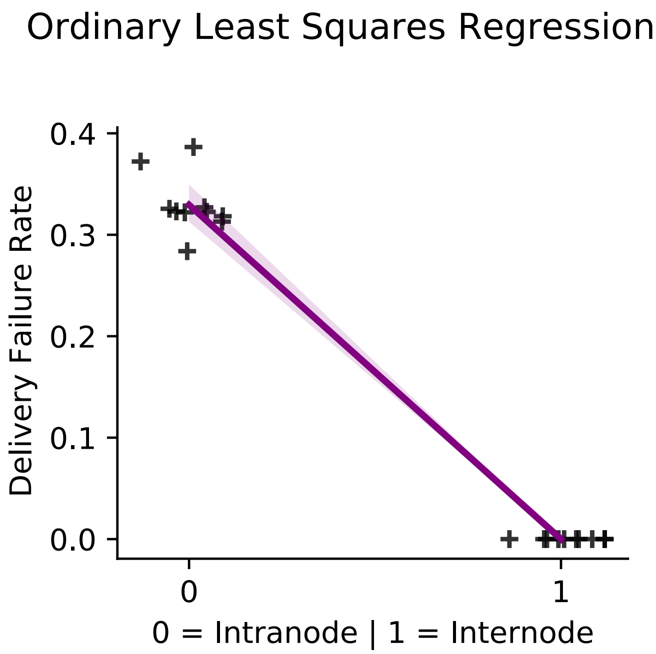




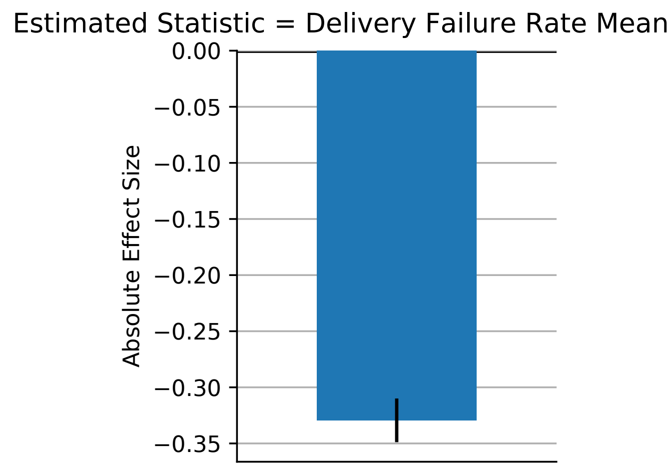
(c) TODO quantile regression

(d) TODO complete quantile regression effect size

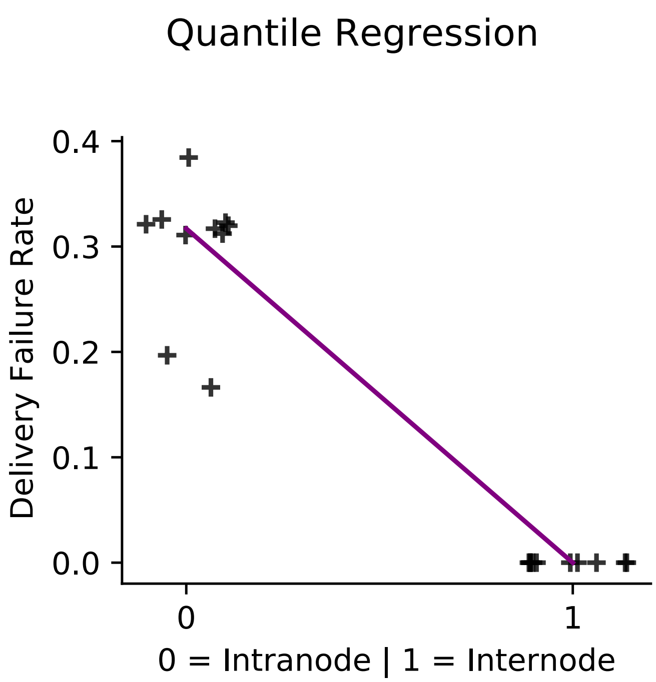
Fig. 56: computation vs communication Simstep Period Outlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



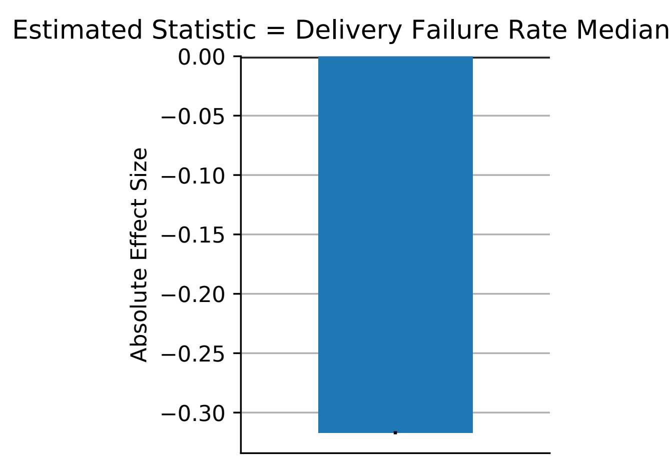
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

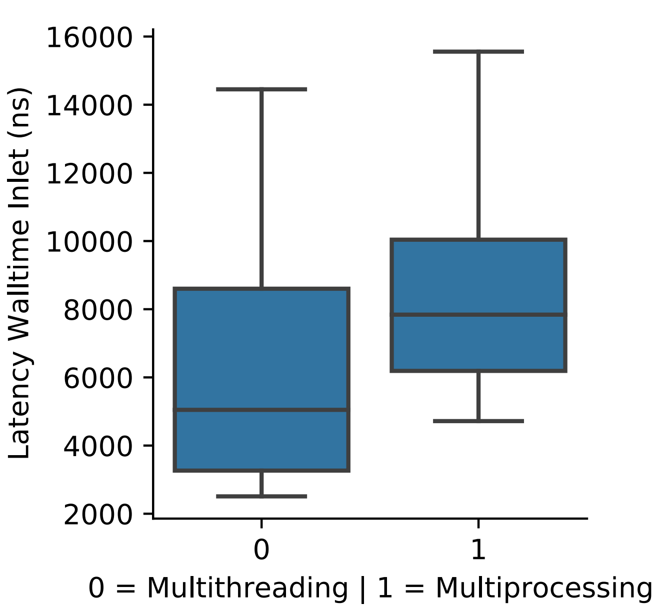


(c) TODO quantile regression

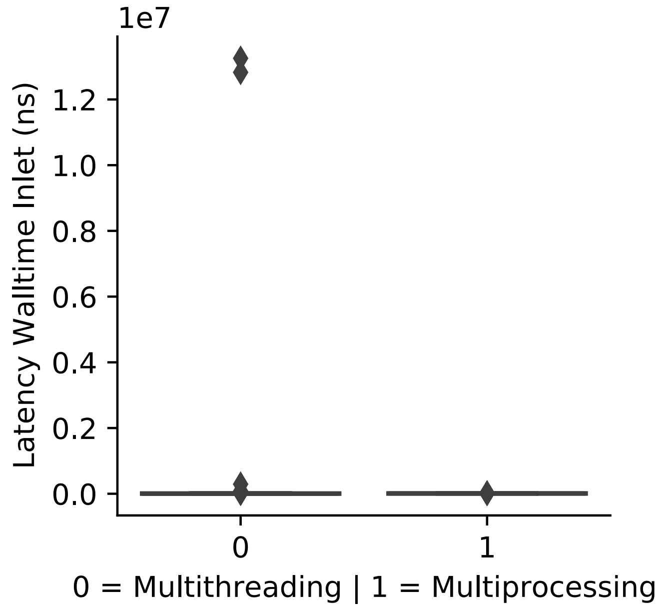


(d) TODO complete quantile regression effect size

Fig. 57: computation vs communication Delivery Failure Rate ordinary least squares regression to estimate mean and quantile regression to estimate median

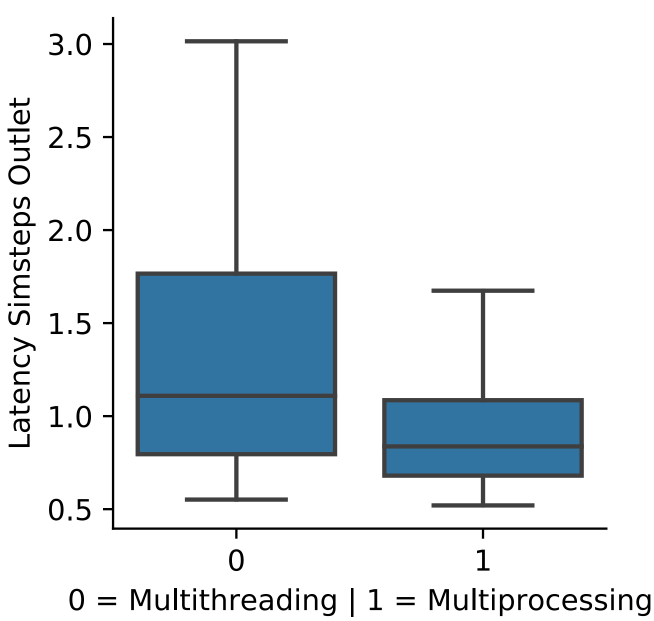


(a) TODO without outliers

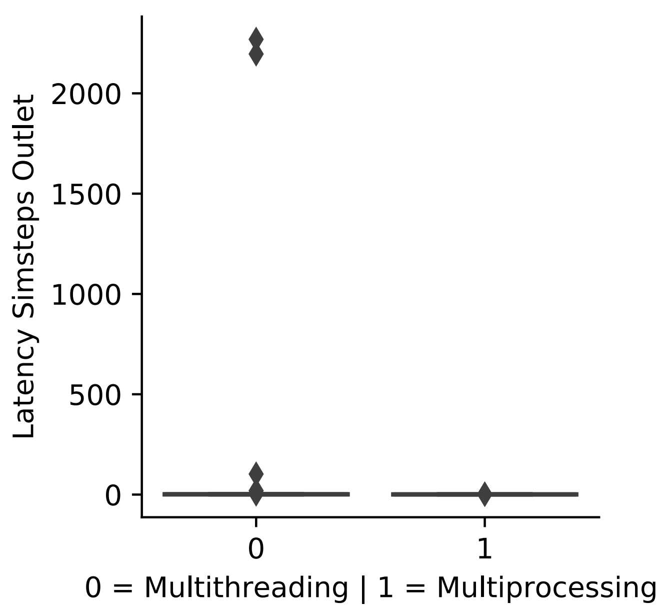


(b) TODO without outliers

Fig. 58: multithreading vs multiprocessing Latency Walltime Inlet (ns) TODO

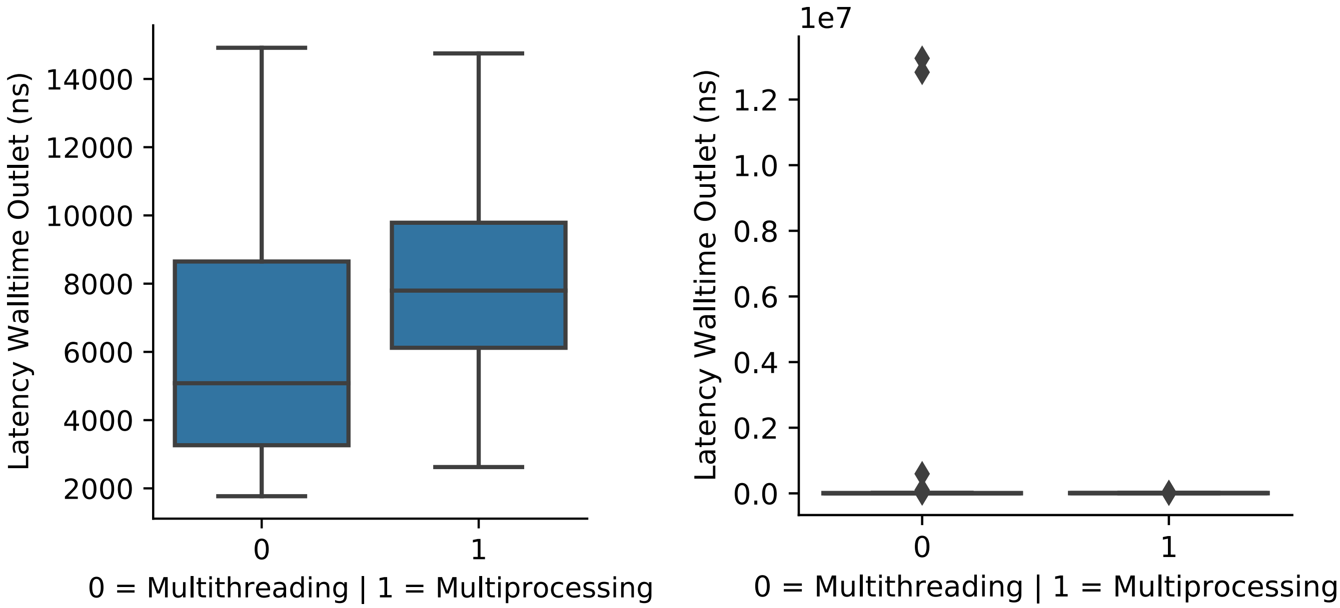


(a) TODO without outliers



(b) TODO without outliers

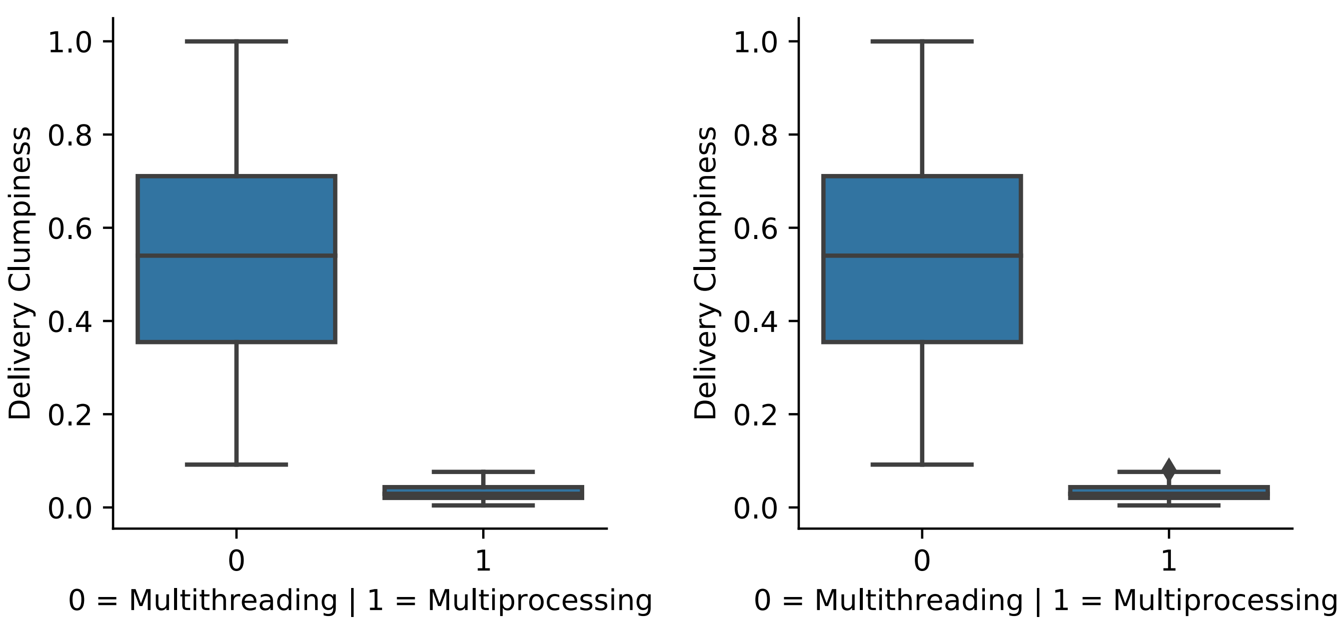
Fig. 59: multithreading vs multiprocessing Latency Simsteps Outlet TODO



(a) TODO without outliers

(b) TODO without outliers

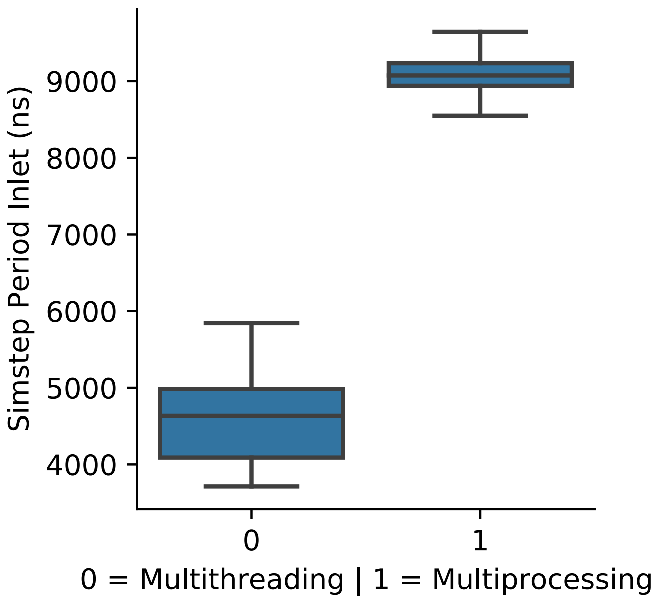
Fig. 60: multithreading vs multiprocessing   Latency Walltime Outlet (ns)   TODO



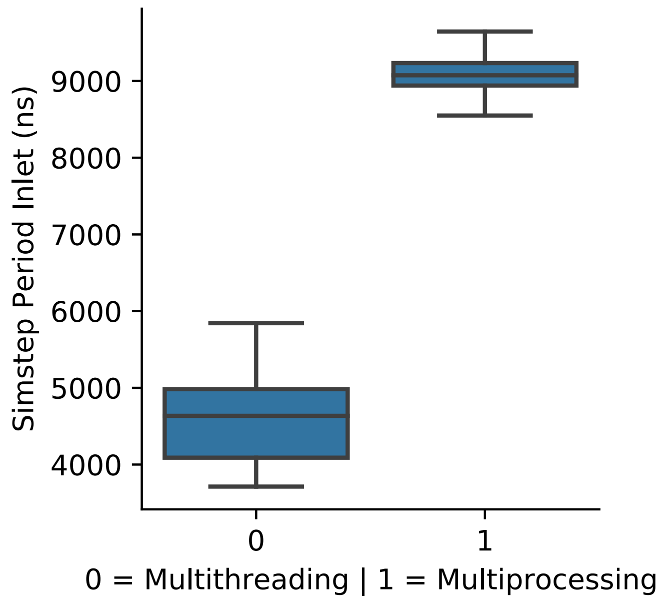
(a) TODO without outliers

(b) TODO without outliers

Fig. 61: multithreading vs multiprocessing   Delivery Clumpiness   TODO

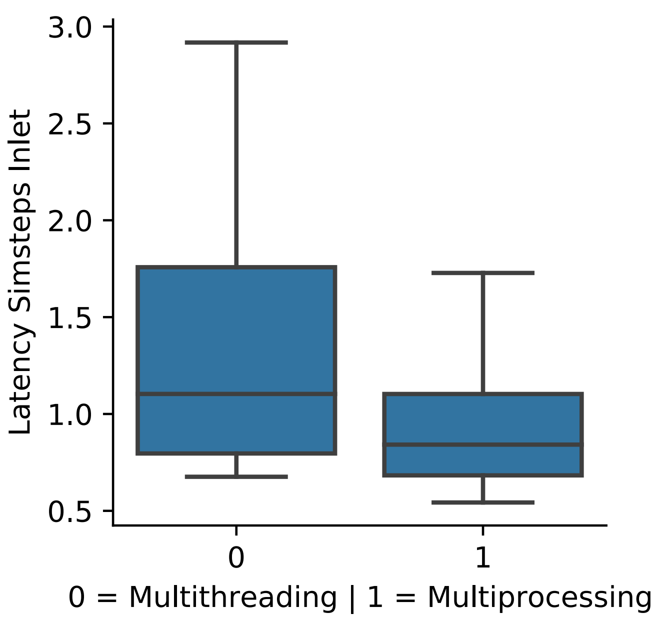


(a) TODO without outliers

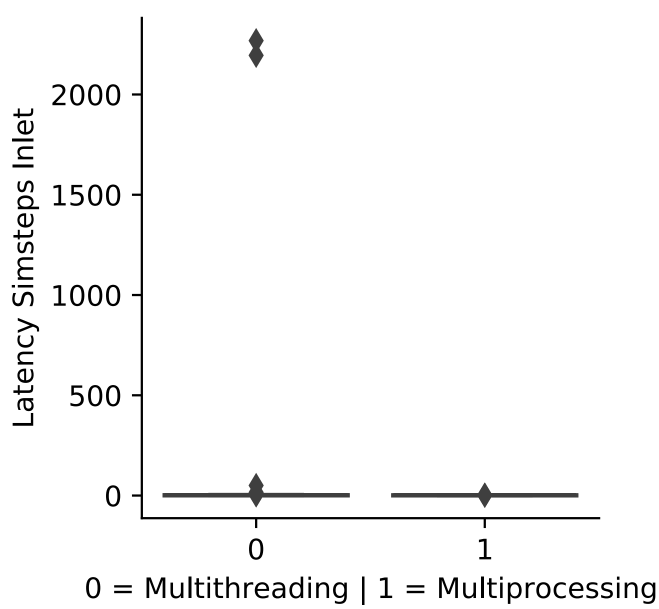


(b) TODO without outliers

Fig. 62: multithreading vs multiprocessing Simstep Period Inlet (ns) TODO

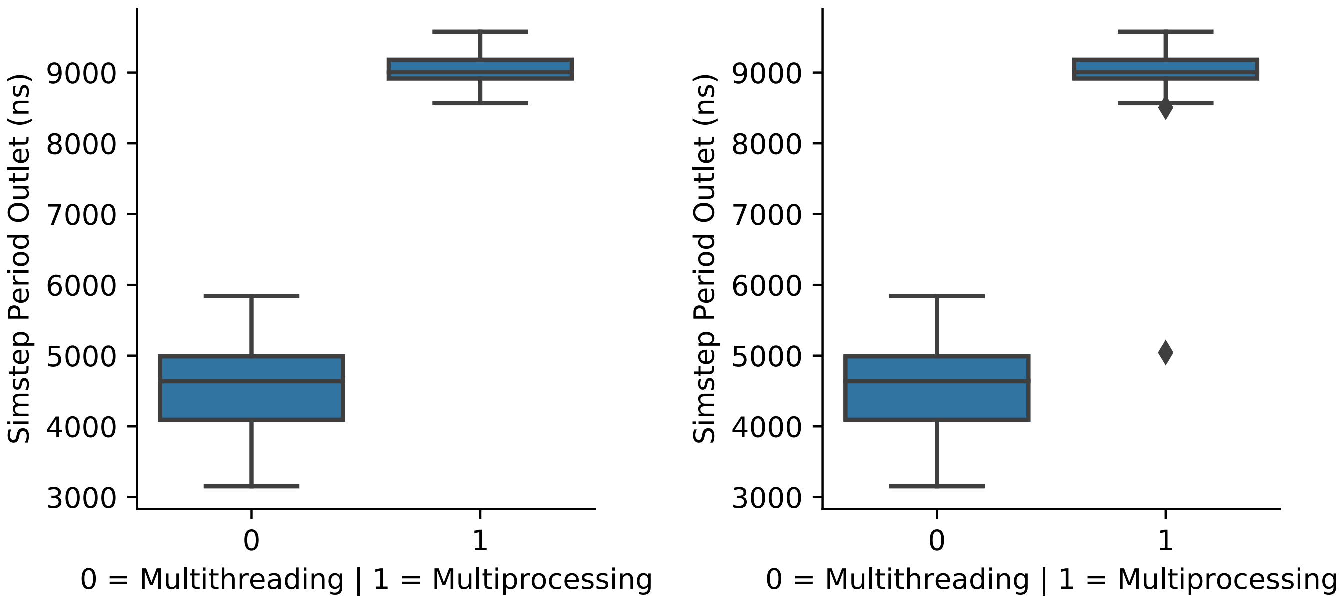


(a) TODO without outliers



(b) TODO without outliers

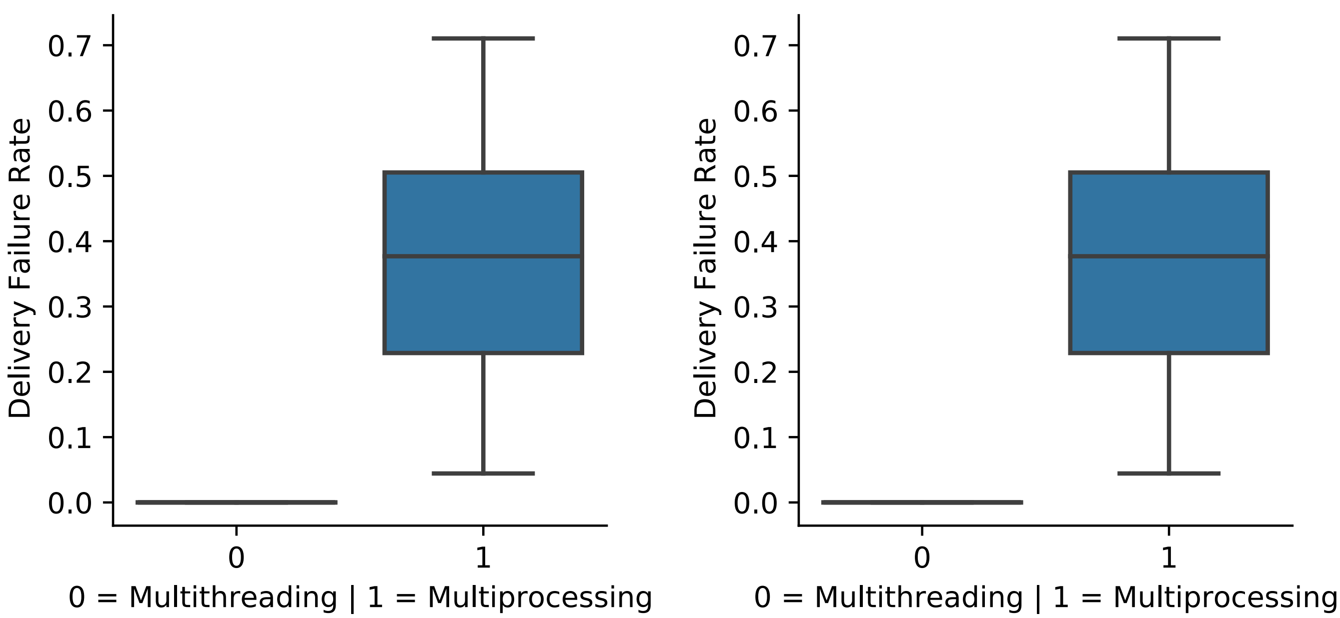
Fig. 63: multithreading vs multiprocessing Latency Simsteps Inlet TODO



(a) TODO without outliers

(b) TODO without outliers

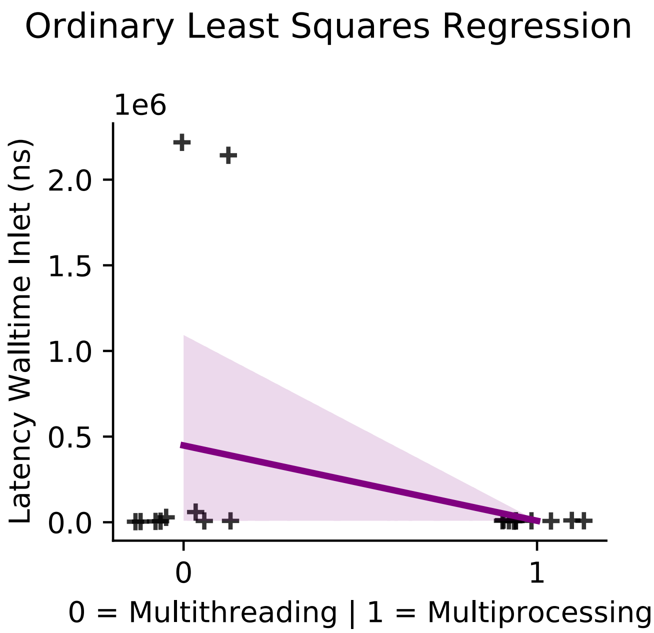
Fig. 64: multithreading vs multiprocessing Simstep Period Outlet (ns) TODO



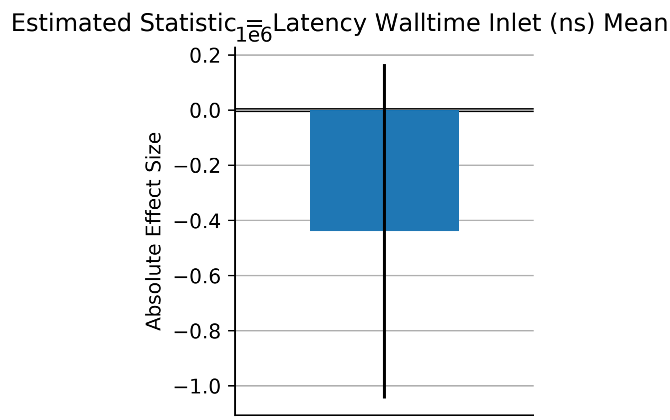
(a) TODO without outliers

(b) TODO without outliers

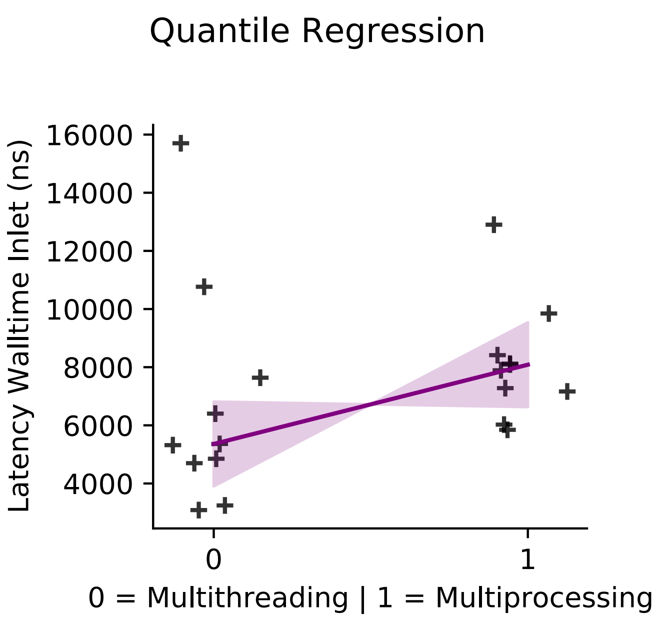
Fig. 65: multithreading vs multiprocessing Delivery Failure Rate TODO



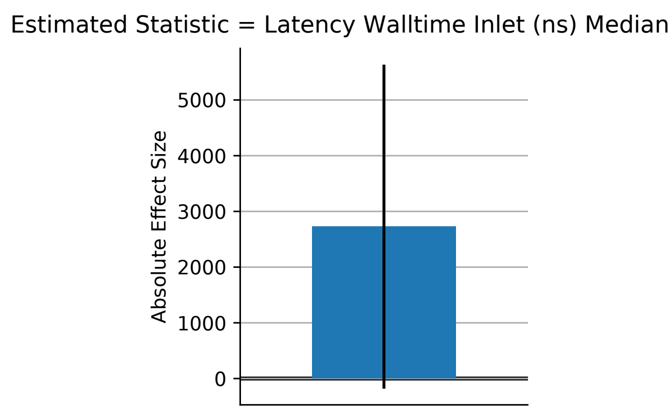
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

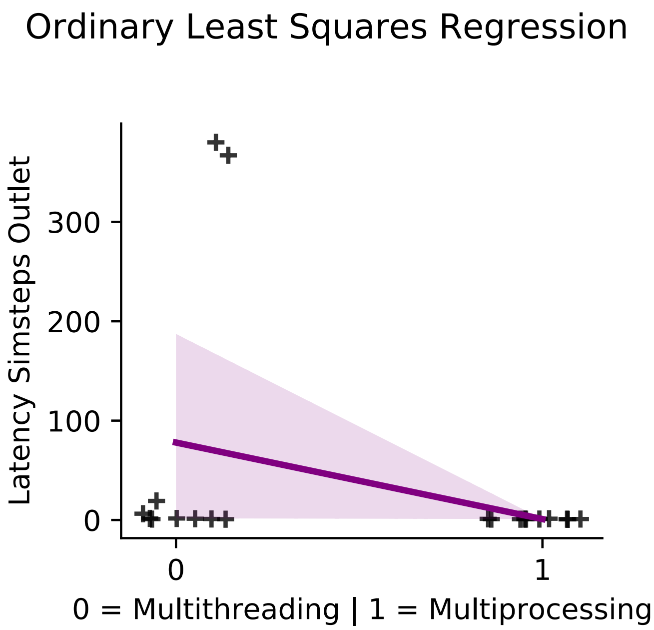


(c) TODO quantile regression

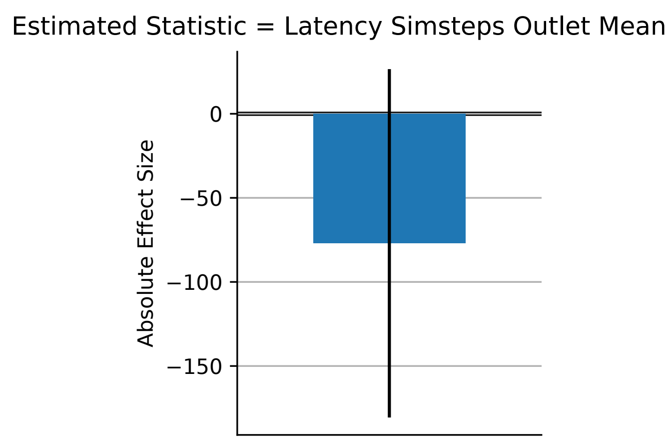


(d) TODO complete quantile regression effect size

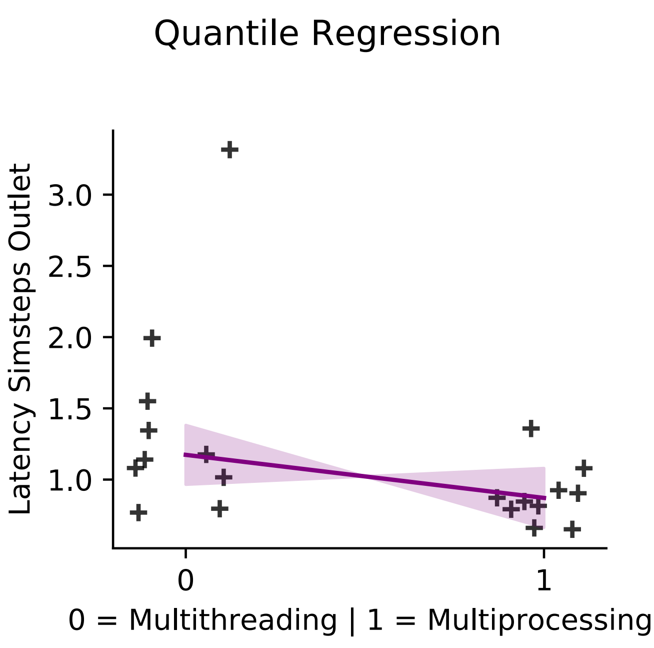
Fig. 66: computation vs communication Latency Walltime Inlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



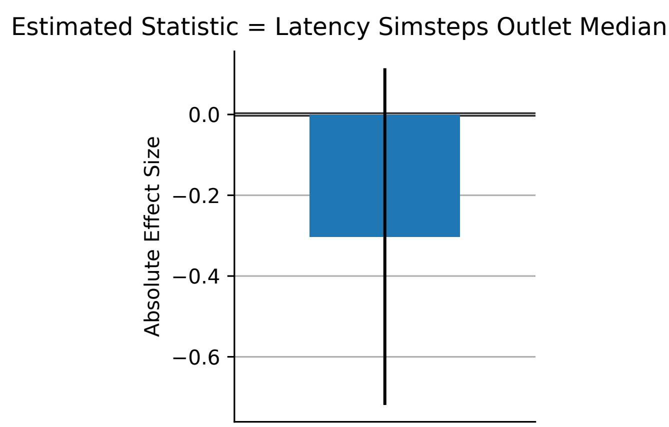
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

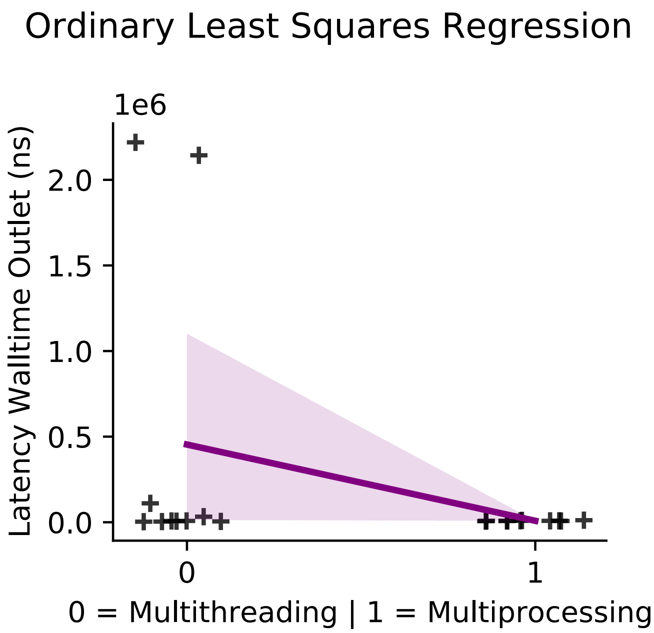


(c) TODO quantile regression

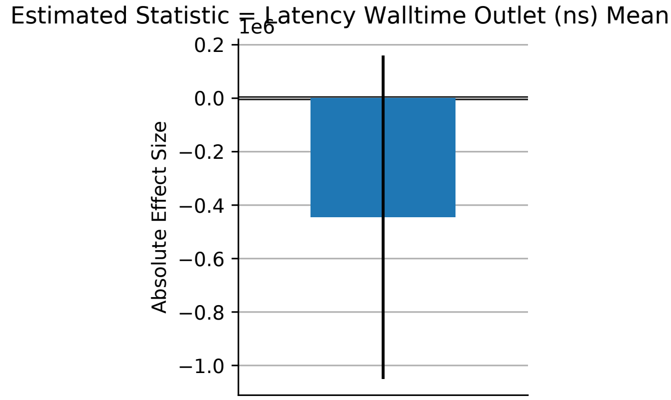


(d) TODO complete quantile regression effect size

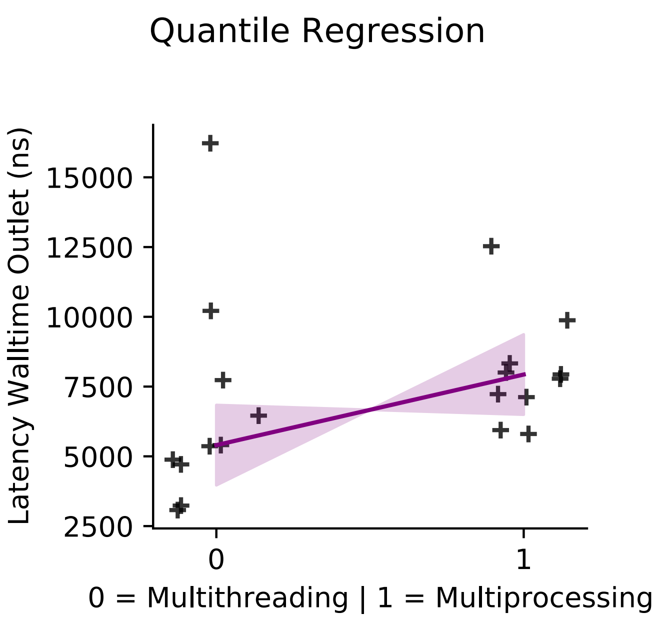
Fig. 67: computation vs communication Latency Simsteps Outlet ordinary least squares regression to estimate mean and quantile regression to estimate median



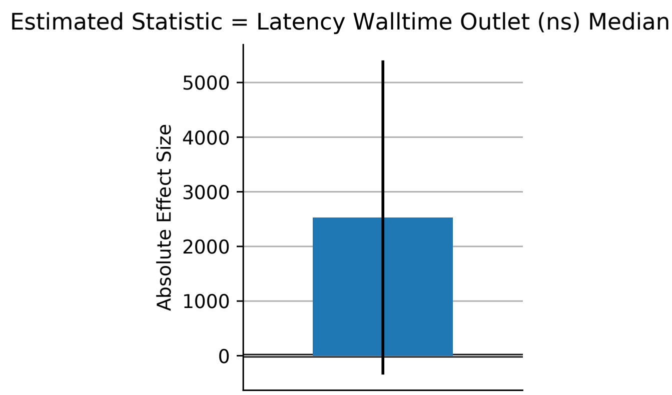
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

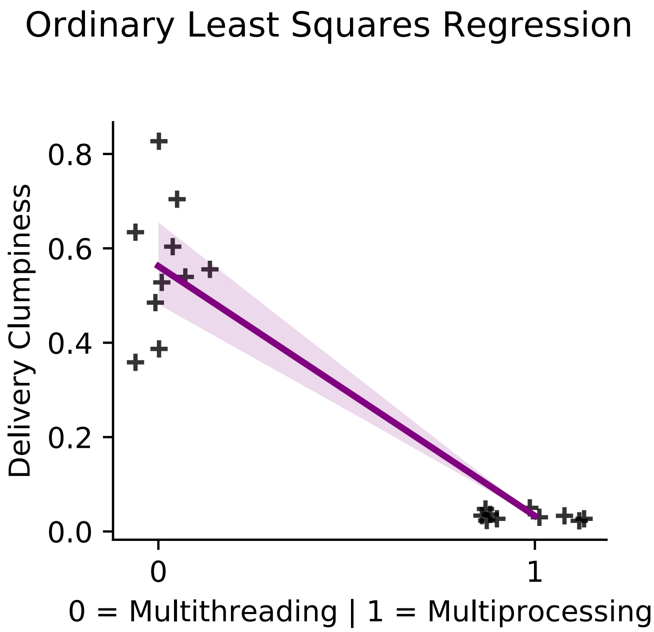


(c) TODO quantile regression

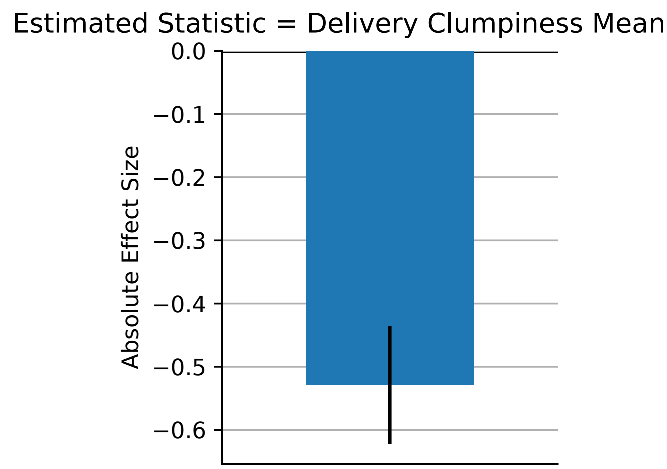


(d) TODO complete quantile regression effect size

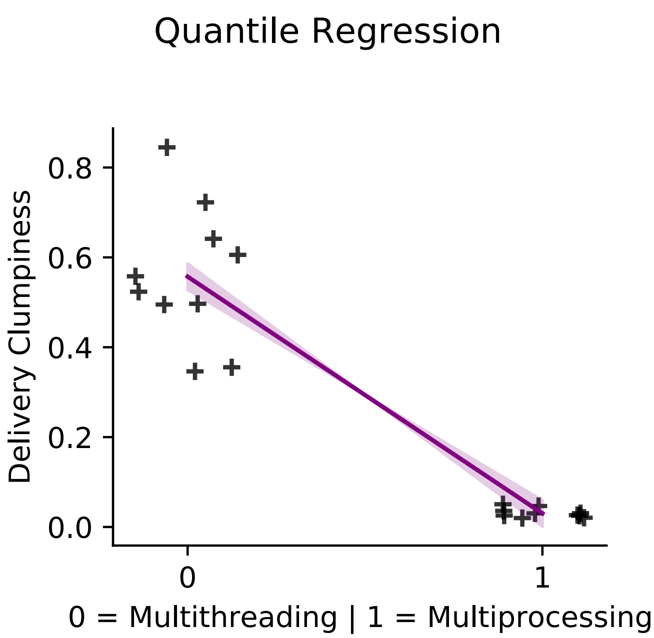
Fig. 68: computation vs communication Latency Walltime Outlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



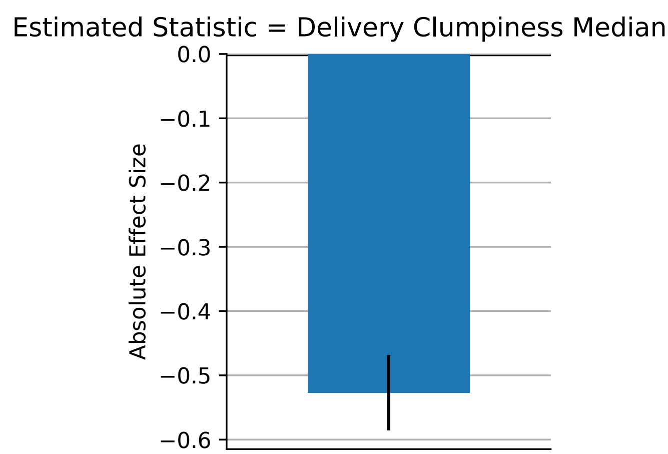
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

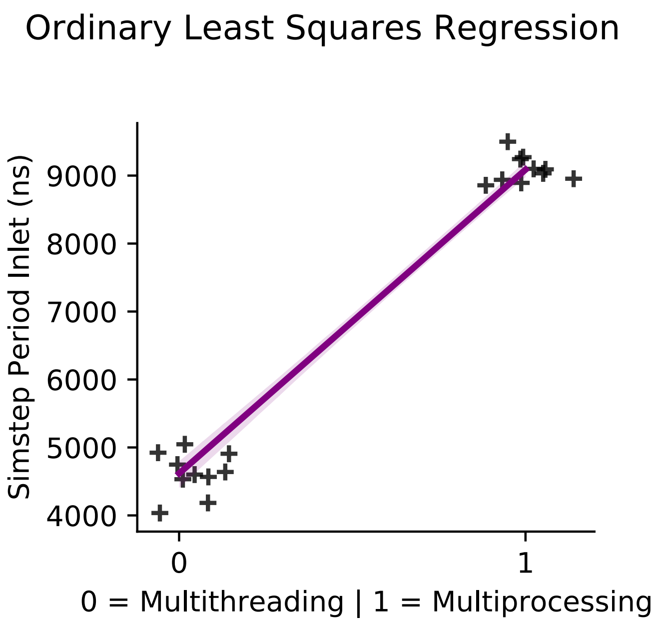


(c) TODO quantile regression

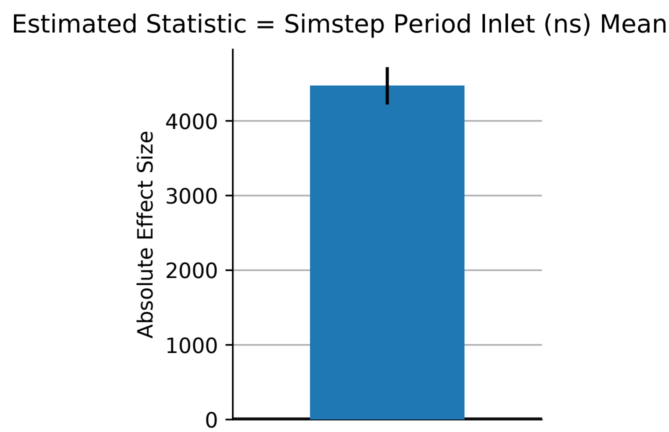


(d) TODO complete quantile regression effect size

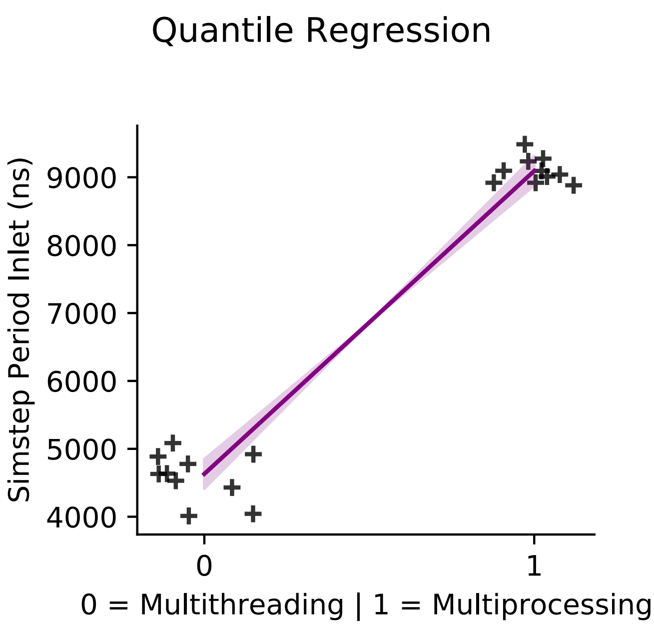
Fig. 69: computation vs communication   Delivery Clumpiness ordinary least squares regression to estimate mean and quantile regression to estimate median



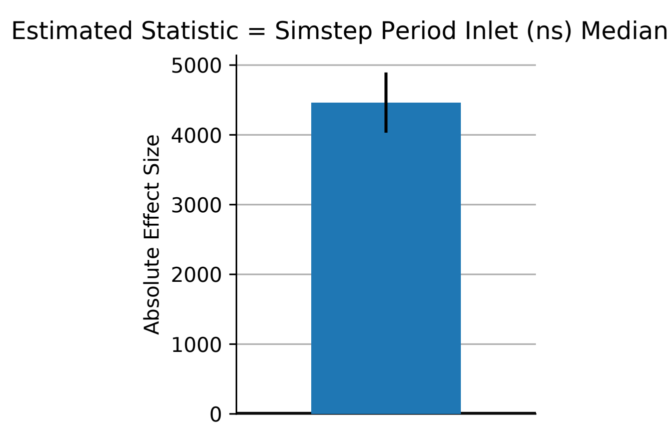
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

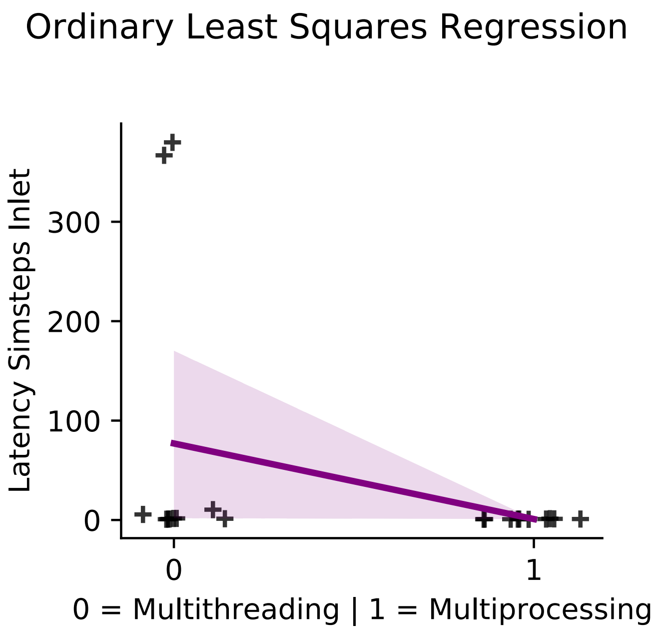


(c) TODO quantile regression

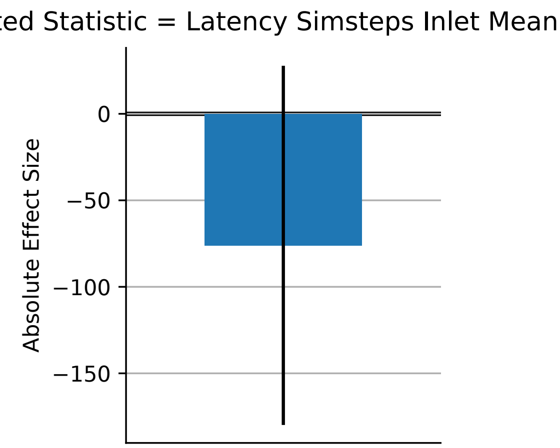


(d) TODO complete quantile regression effect size

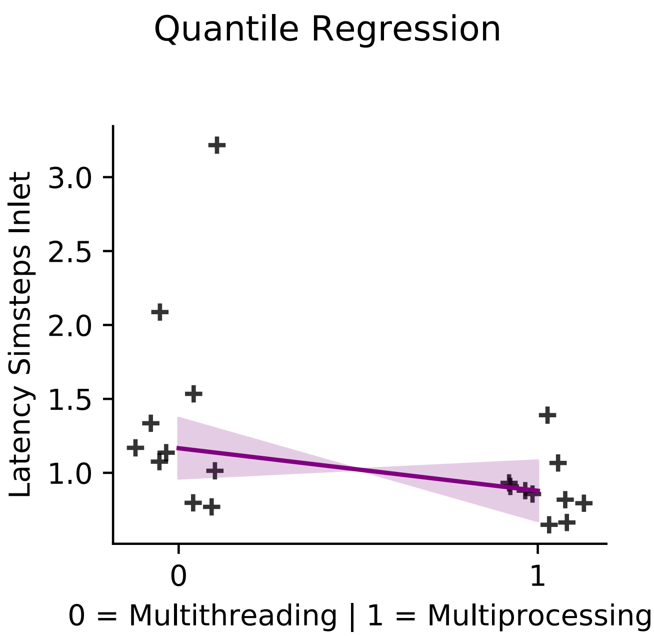
Fig. 70: computation vs communication Simstep Period Inlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



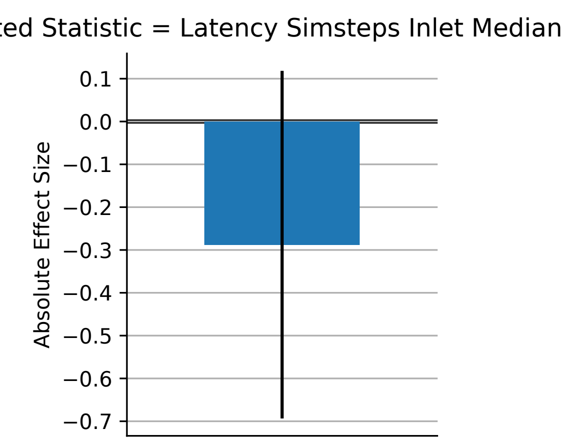
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

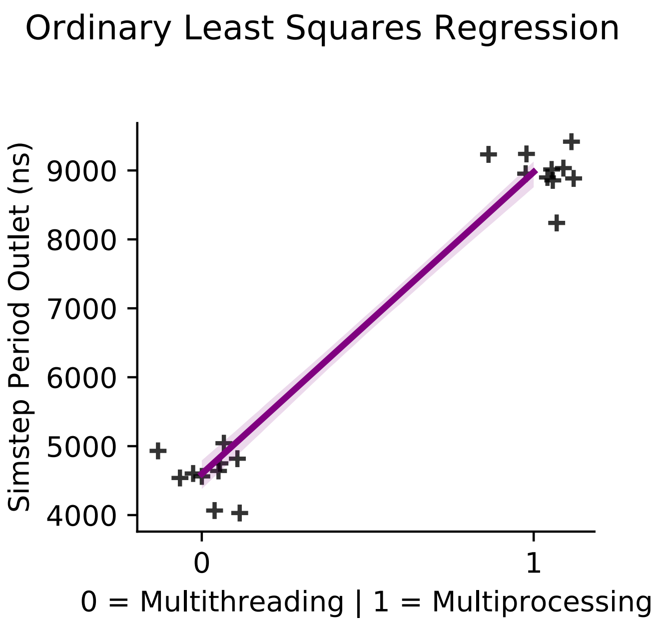


(c) TODO quantile regression

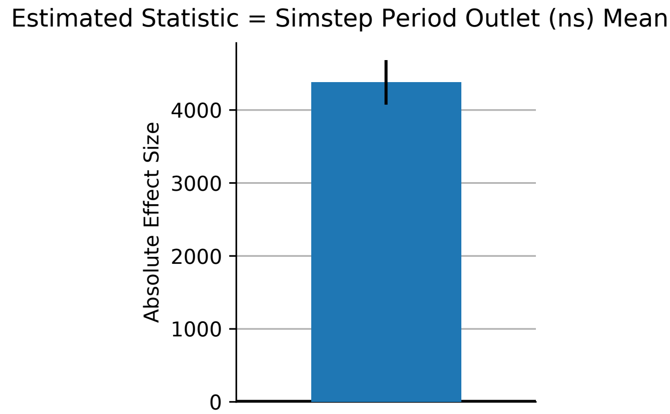


(d) TODO complete quantile regression effect size

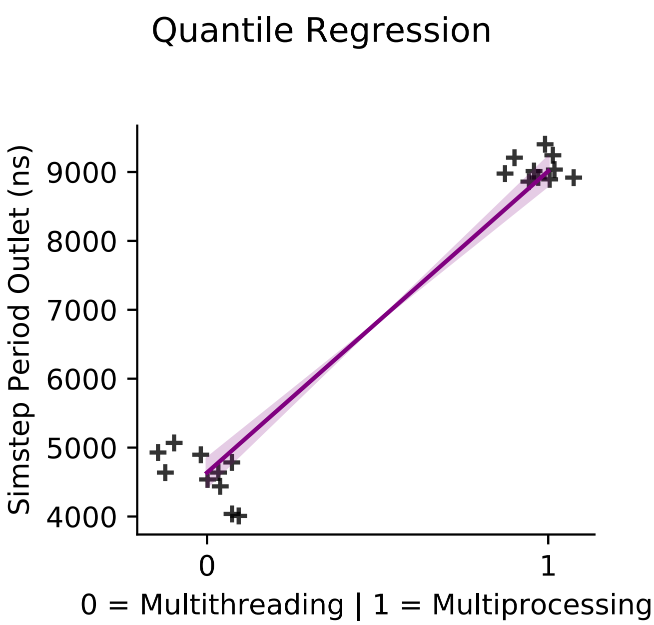
Fig. 71: computation vs communication Latency Simsteps Inlet ordinary least squares regression to estimate mean and quantile regression to estimate median



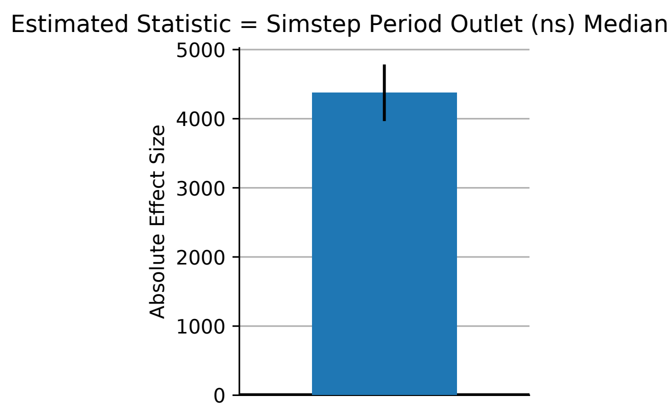
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

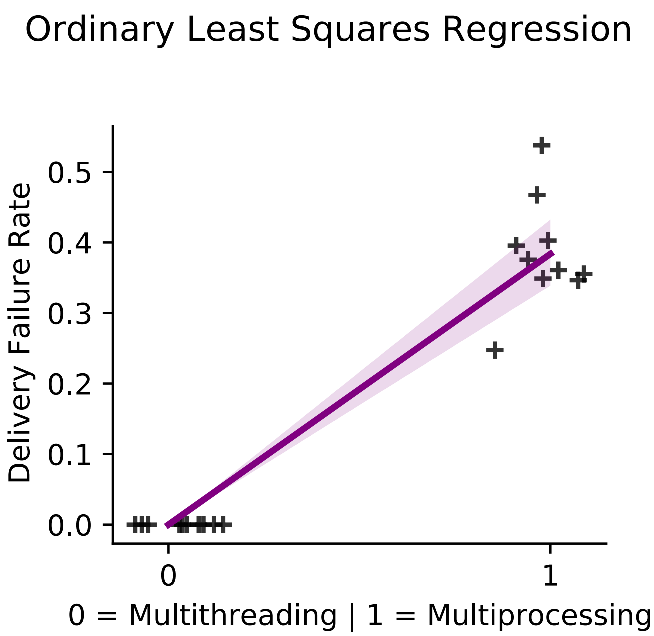


(c) TODO quantile regression

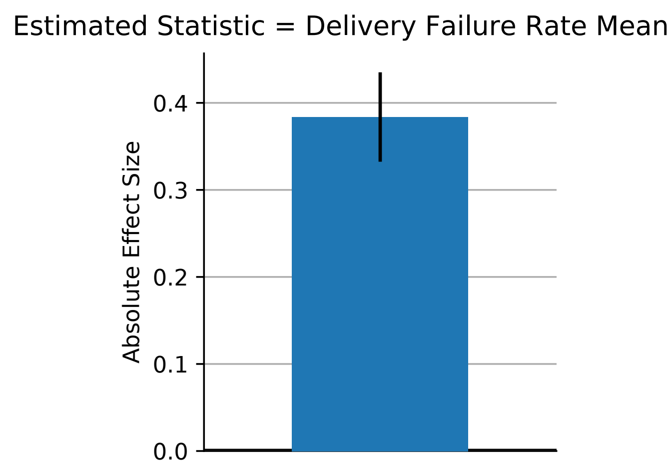


(d) TODO complete quantile regression effect size

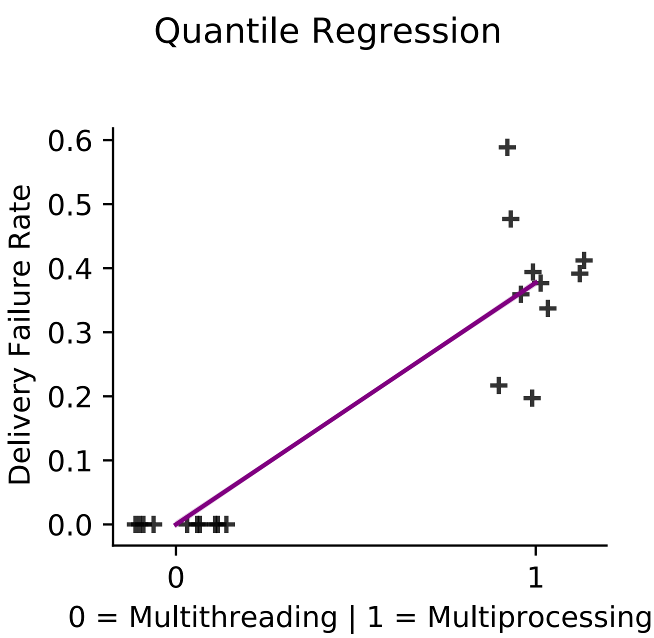
Fig. 72: computation vs communication Simstep Period Outlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



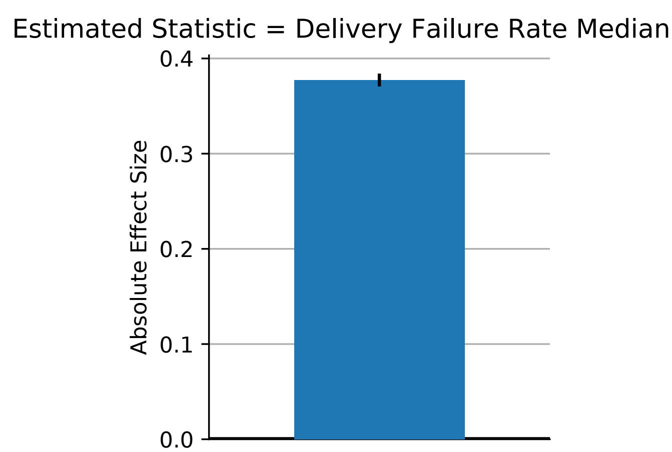
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size



(c) TODO quantile regression



(d) TODO complete quantile regression effect size

Fig. 73: computation vs communication Delivery Failure Rate ordinary least squares regression to estimate mean and quantile regression to estimate median

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[1] G. Eason, B. Noble, and I. N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” Phil. Trans. Roy. Soc. London, vol. A247, pp. 529–551, April 1955.

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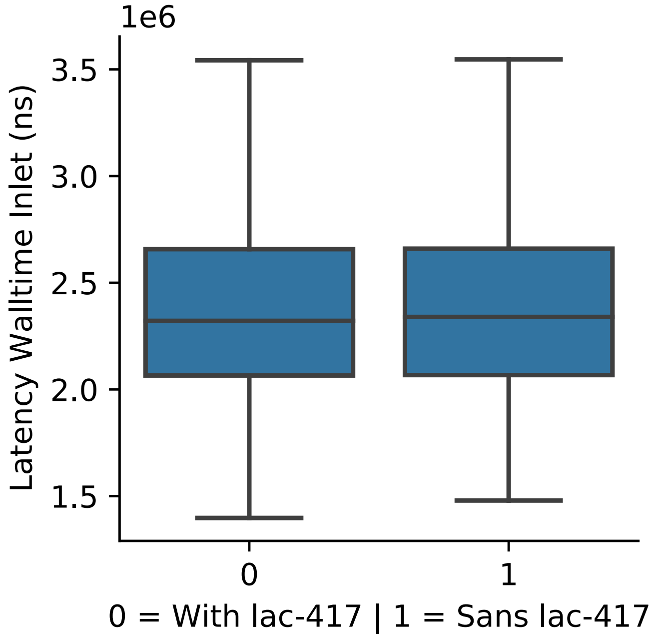
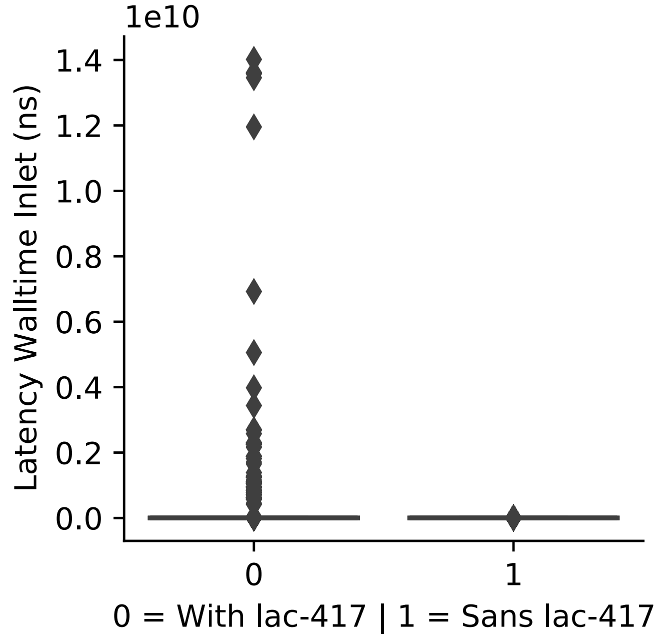
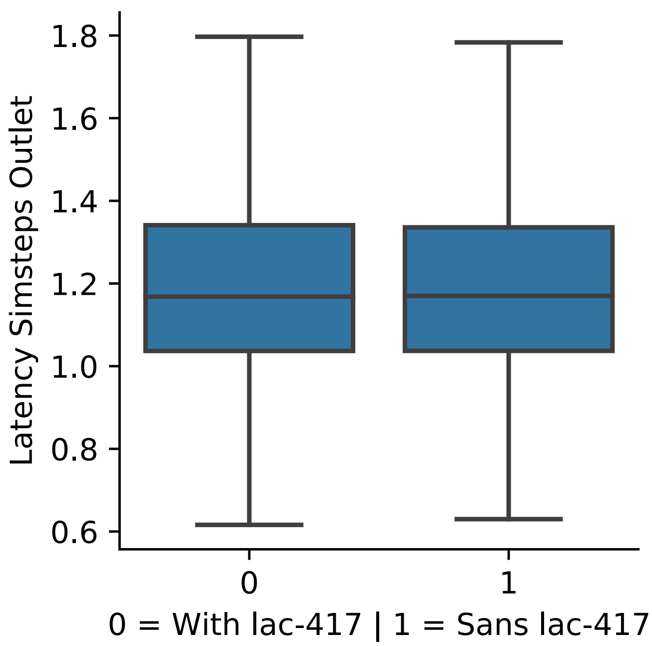


(a) TODO without outliers



(b) TODO without outliers

Fig. 74: with-lac-417 vs sans-lac-417   Latency Walltime Inlet (ns)   TODO



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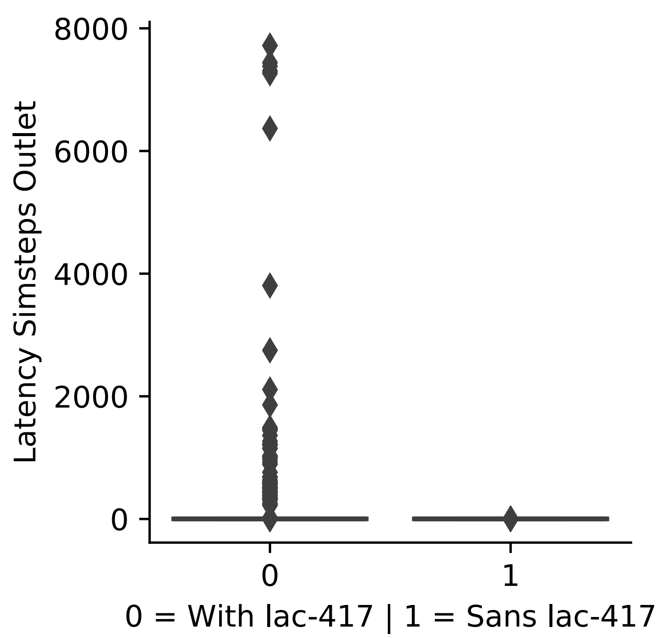
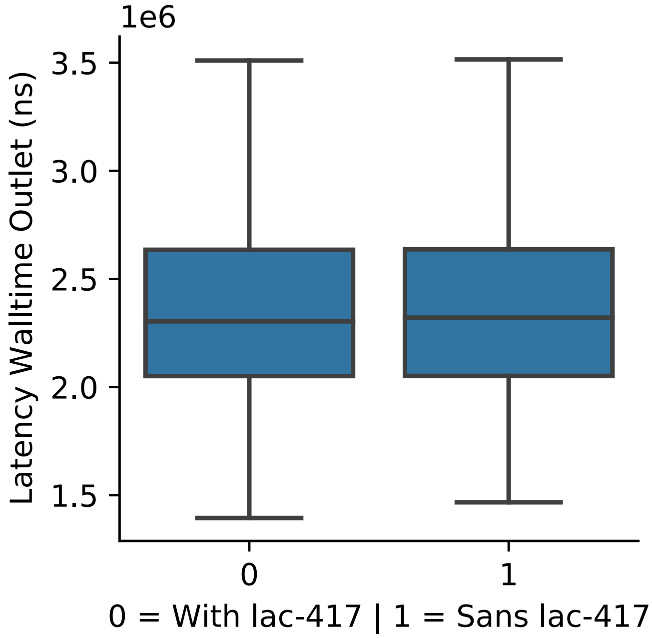


(b) TODO without outliers

Fig. 75: with-lac-417 vs sans-lac-417   Latency Simsteps Outlet   TODO



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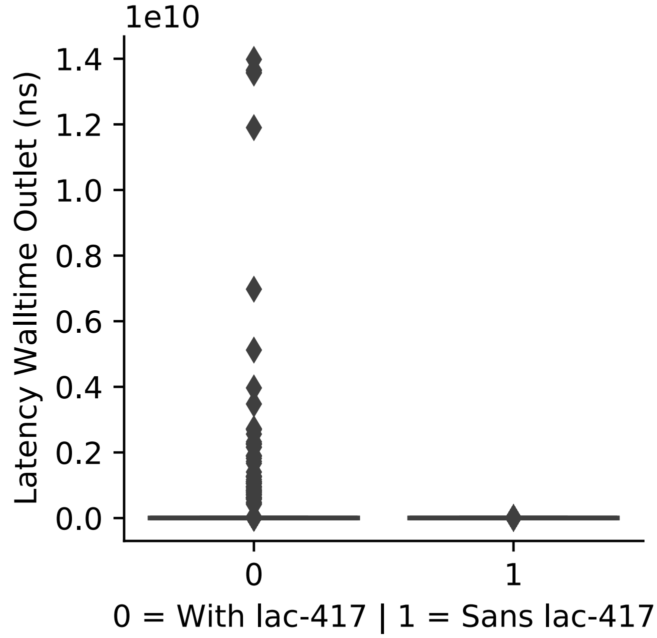
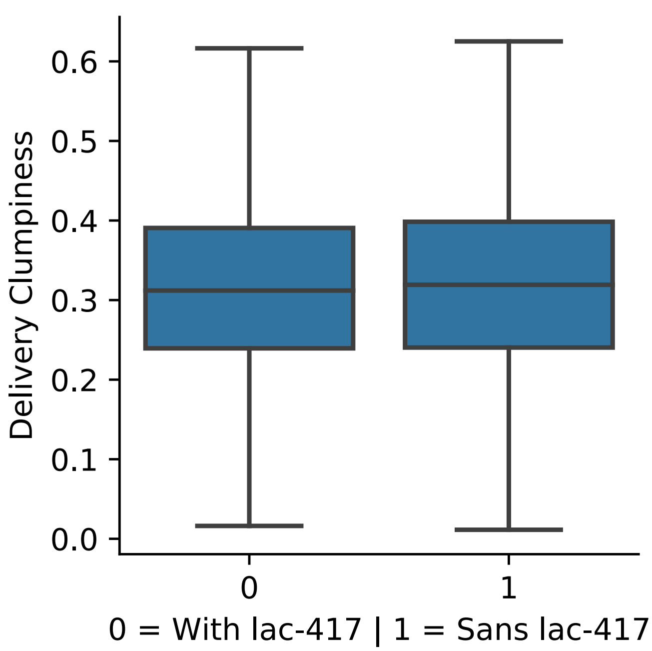


(b) TODO without outliers

Fig. 76: with-lac-417 vs sans-lac-417 Latency Walltime Outlet (ns) TODO



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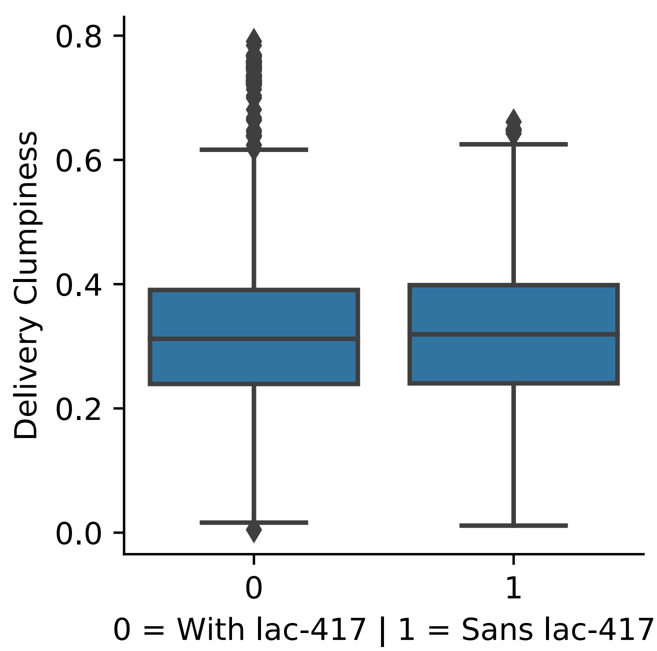
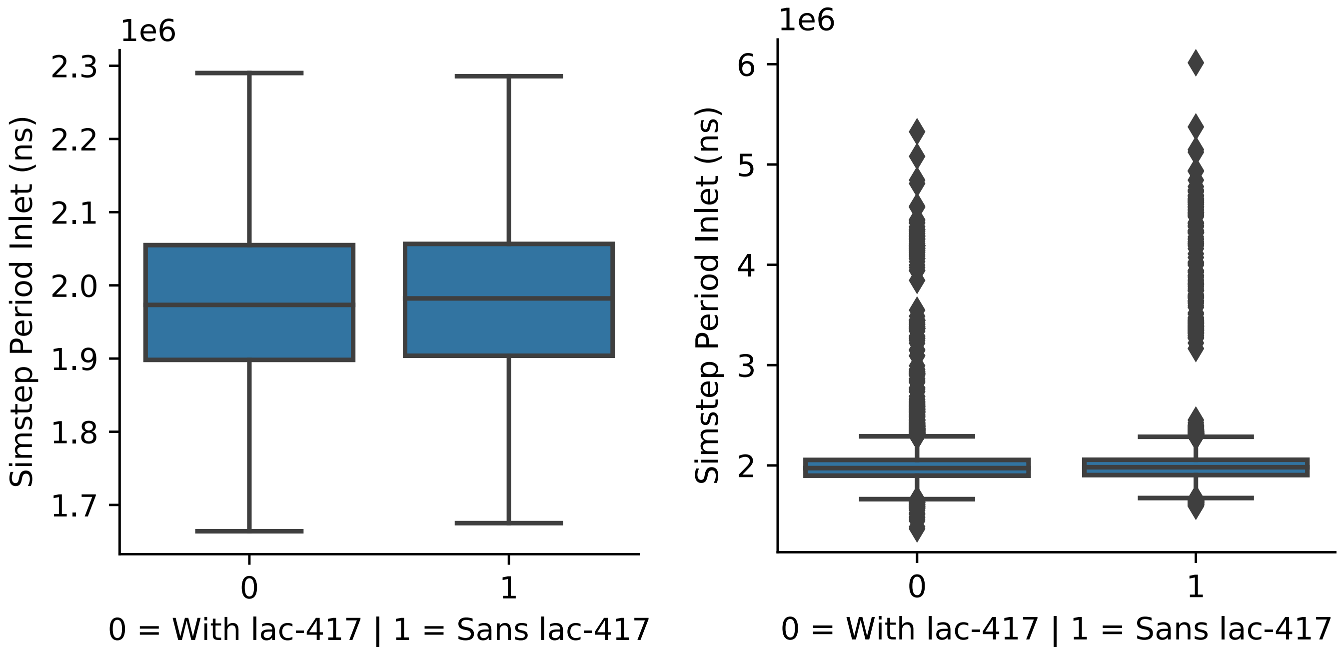


(b) TODO without outliers

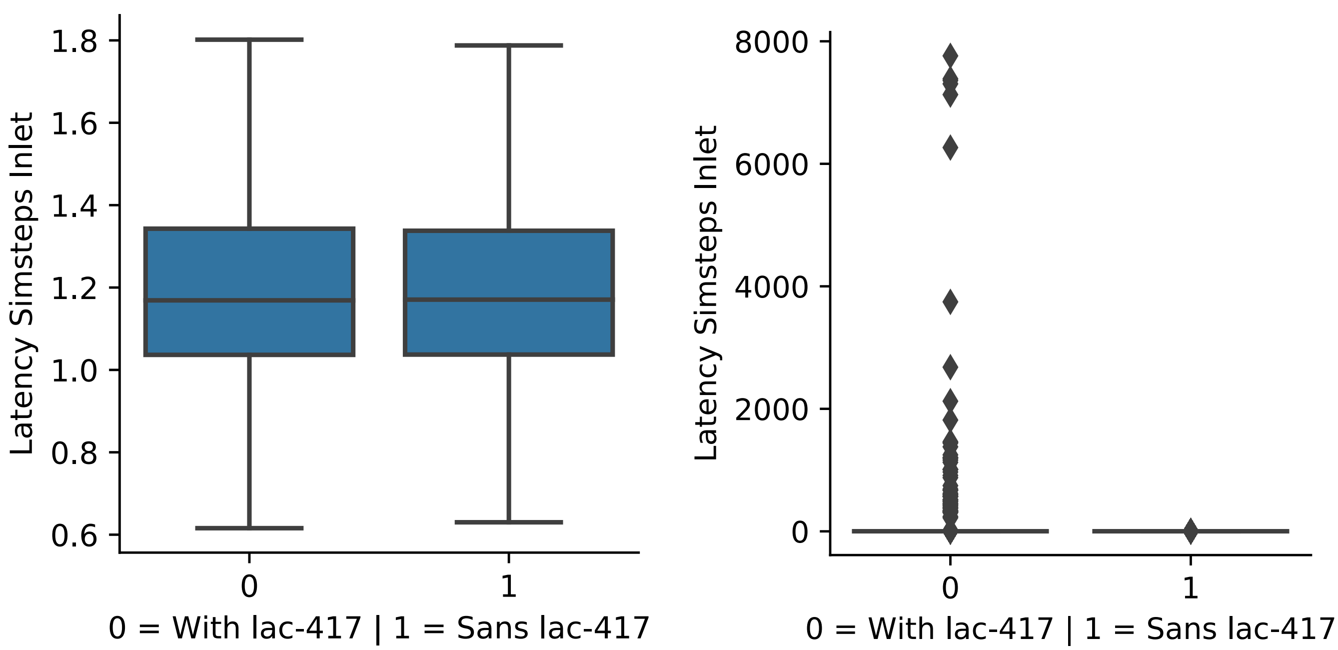
Fig. 77: with-lac-417 vs sans-lac-417 Delivery Clumpiness TODO



(a) TODO without outliers

(b) TODO without outliers

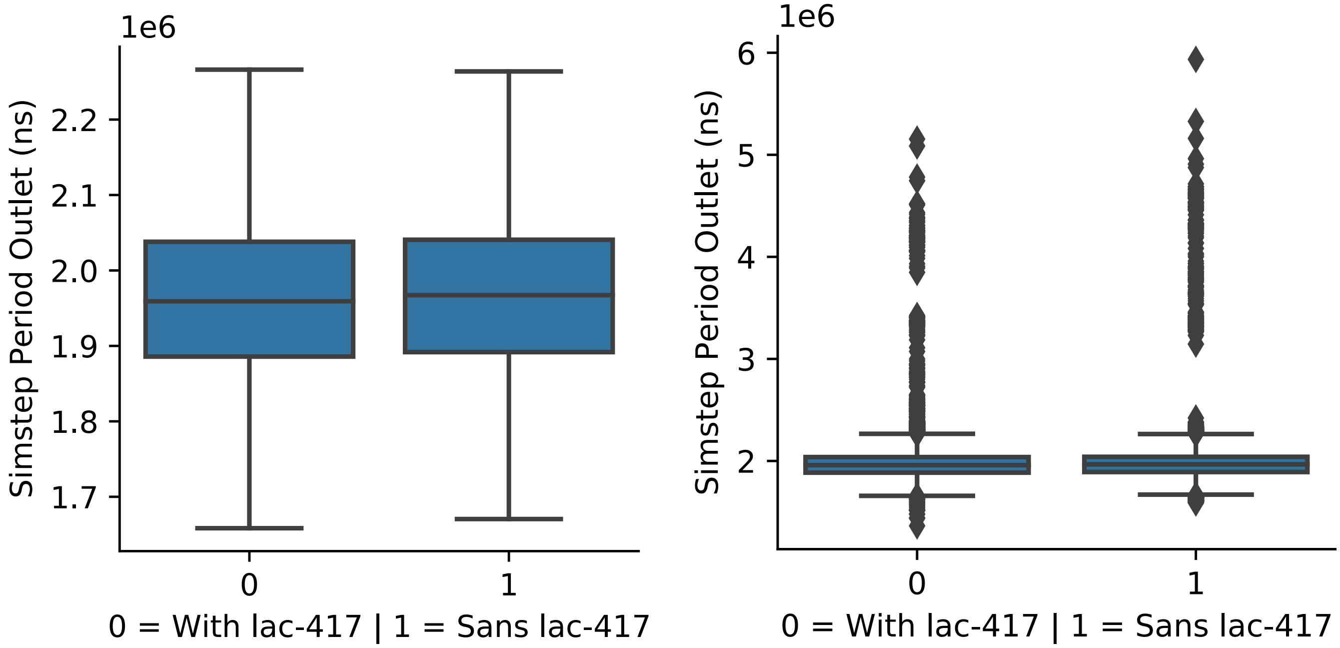
Fig. 78: with-lac-417 vs sans-lac-417   Simstep Period Inlet (ns) TODO



(a) TODO without outliers

(b) TODO without outliers

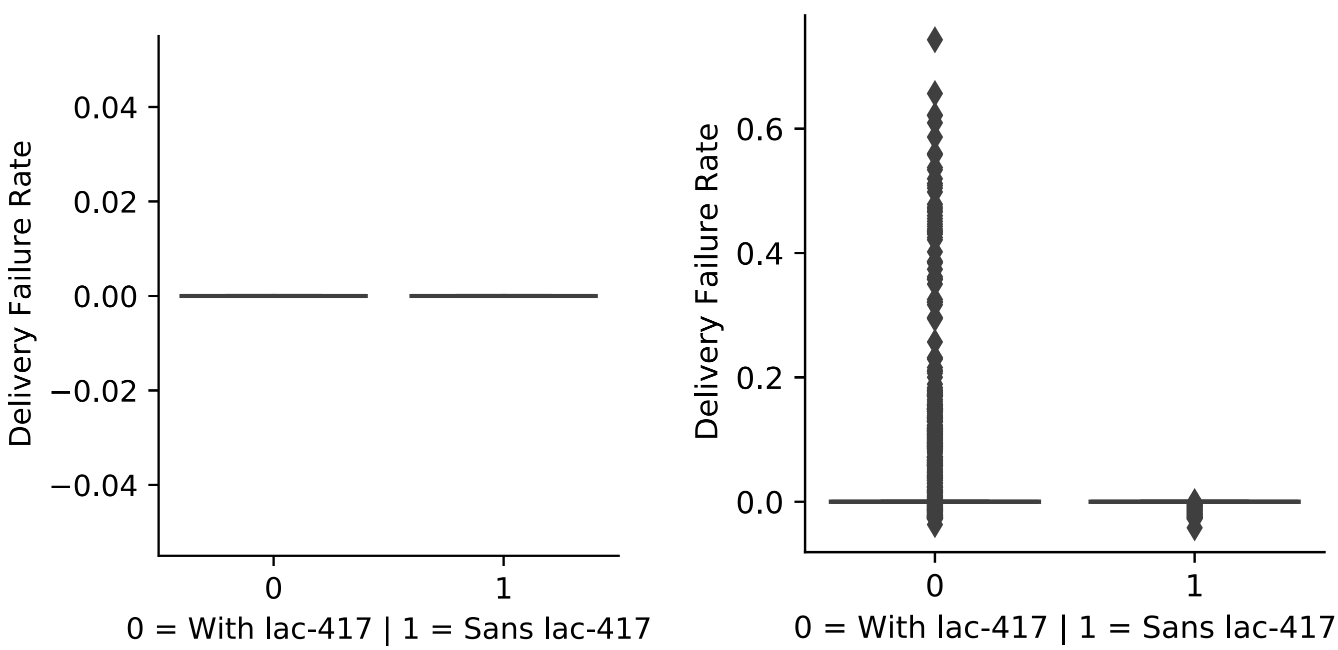
Fig. 79: with-lac-417 vs sans-lac-417   Latency Simsteps Inlet TODO



(a) TODO without outliers

(b) TODO without outliers

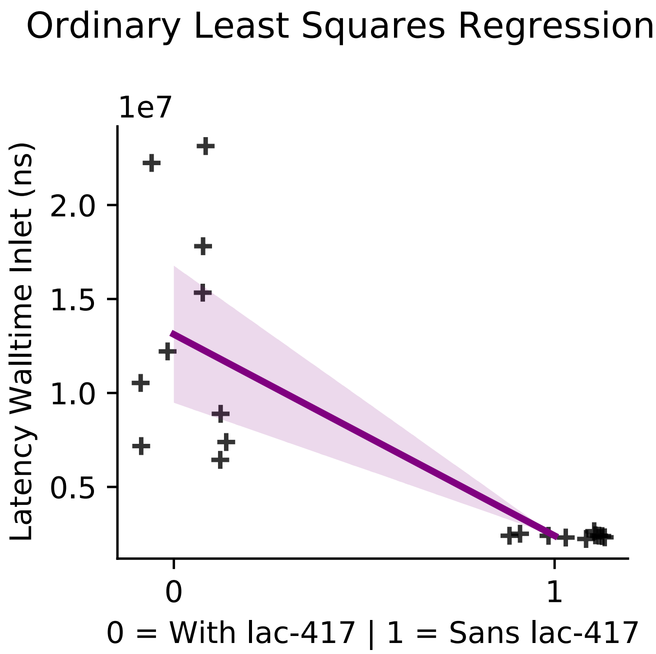
Fig. 80: with-lac-417 vs sans-lac-417 Simstep Period Outlet (ns) TODO



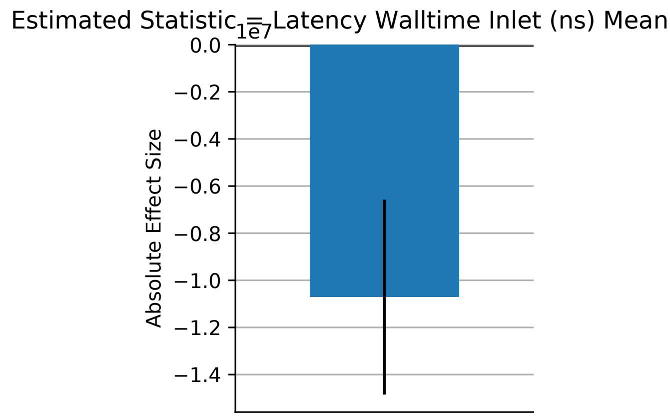
(a) TODO without outliers

(b) TODO without outliers

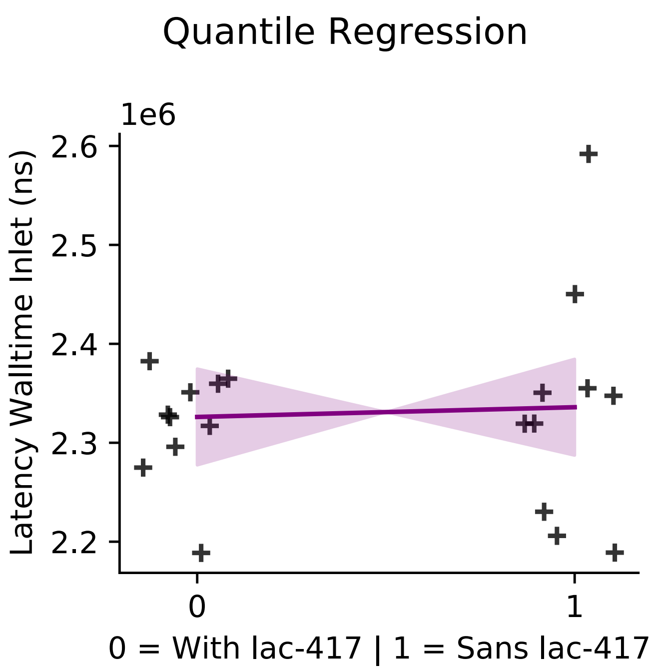
Fig. 81: with-lac-417 vs sans-lac-417 Delivery Failure Rate TODO



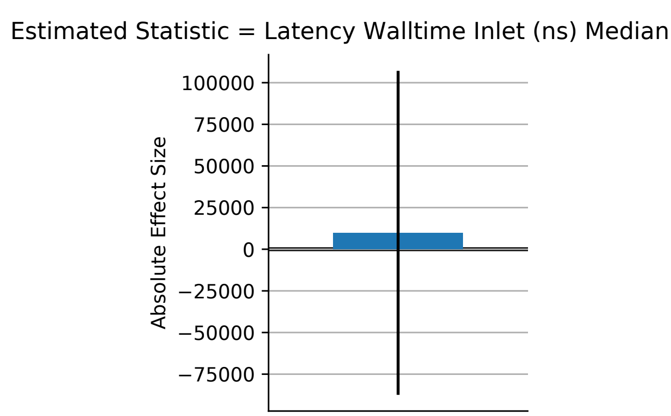
(a) TODO complete ordinary regression



(b) TODO complete ols regression effect size

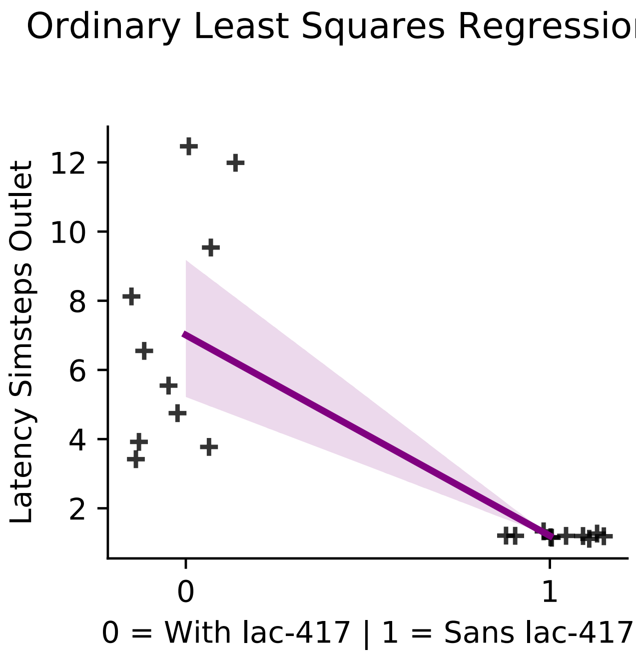


(c) TODO quantile regression



(d) TODO complete quantile regression effect size

Fig. 82: computation vs communication Latency Walltime Inlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



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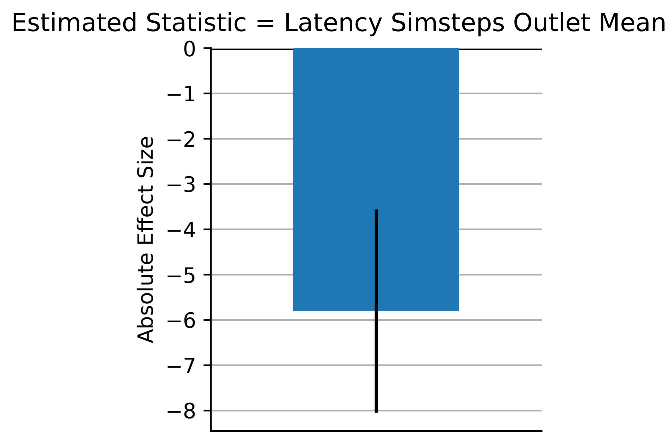

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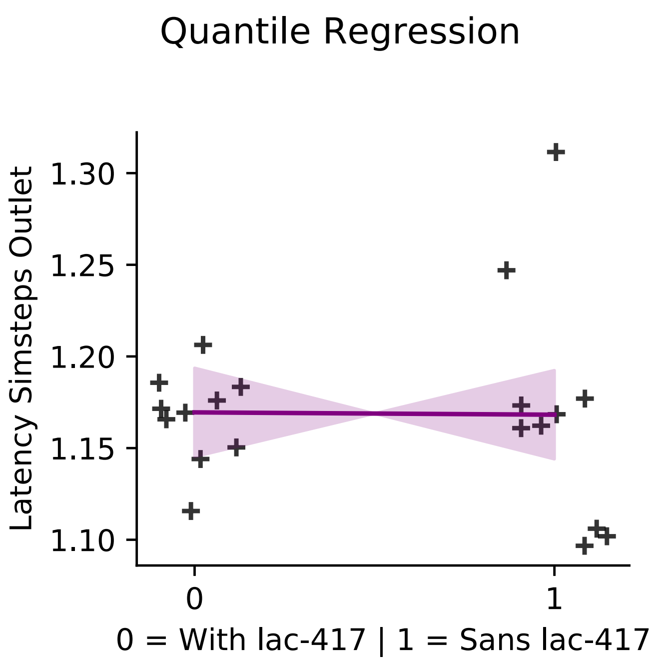

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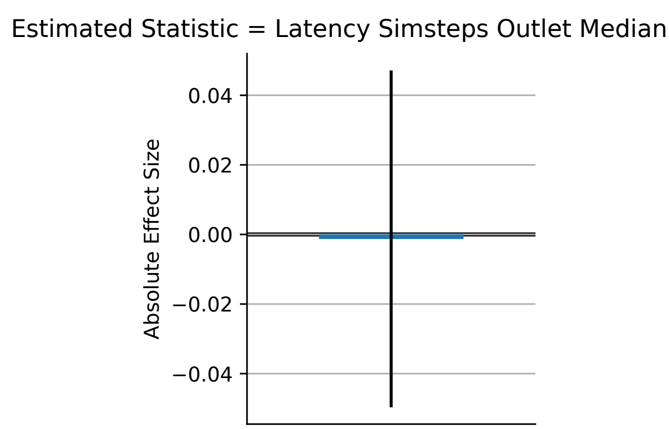
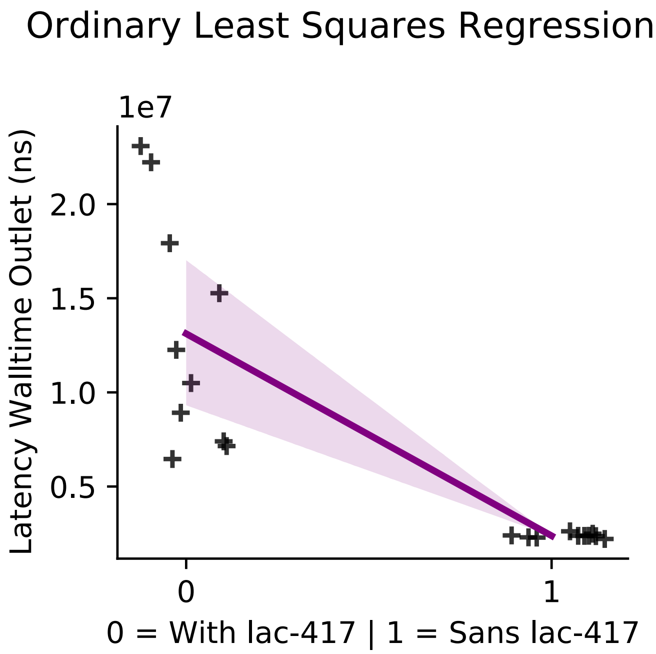


(d) TODO complete quantile regression effect size

Fig. 83: computation vs communication Latency Simsteps Outlet ordinary least squares regression to estimate mean and quantile regression to estimate median



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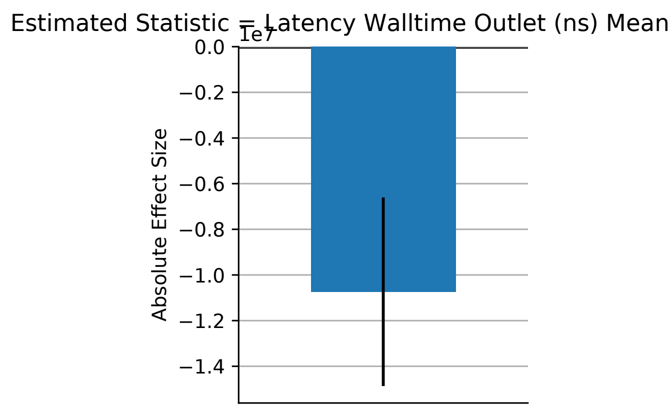

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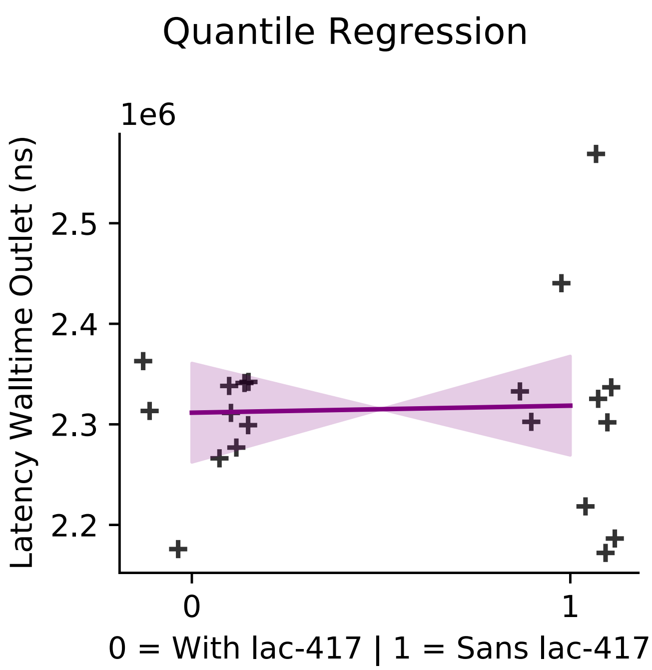

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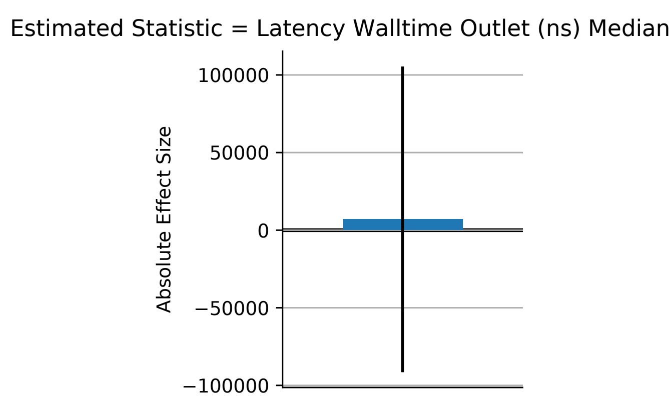
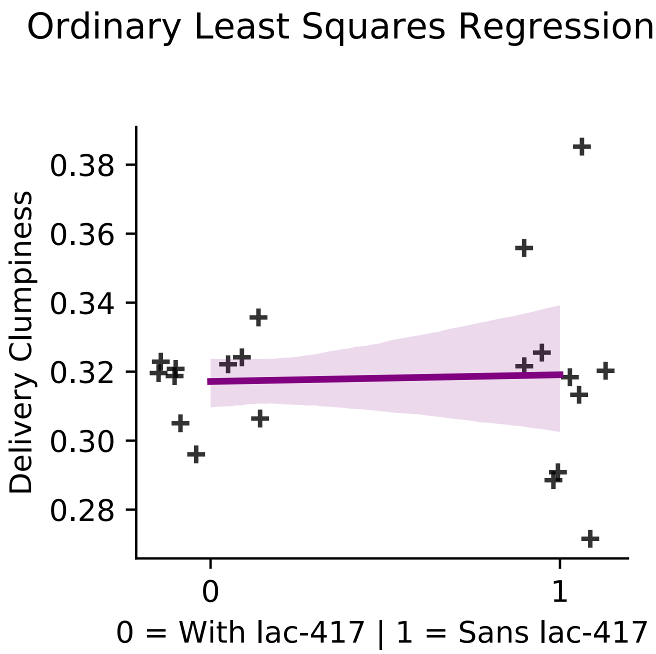


(d) TODO complete quantile regression effect size

Fig. 84: computation vs communication Latency Walltime Outlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



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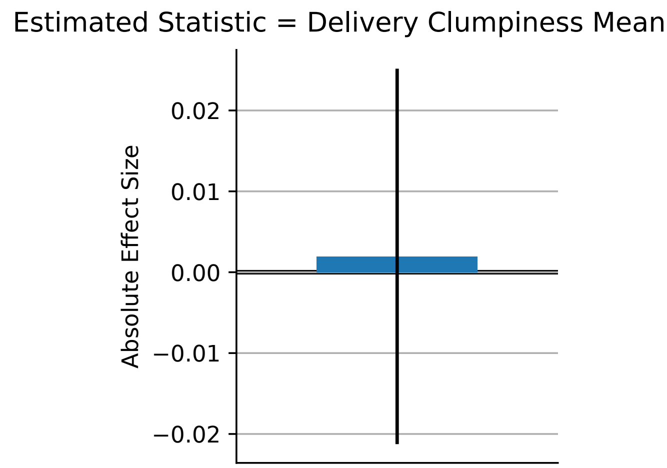

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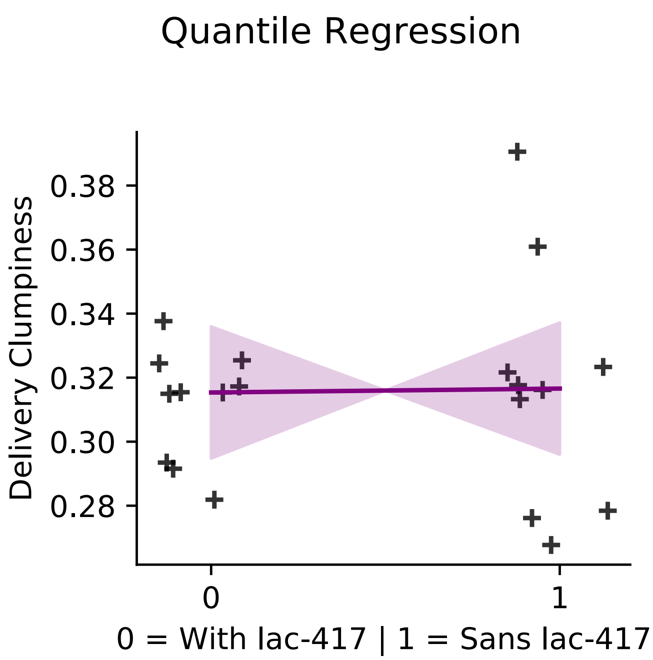
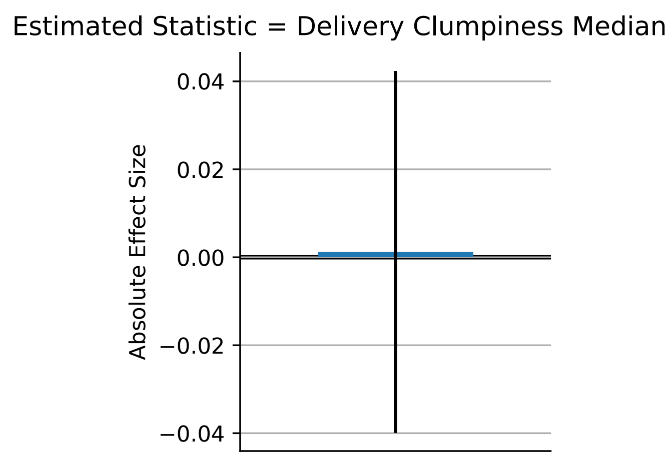
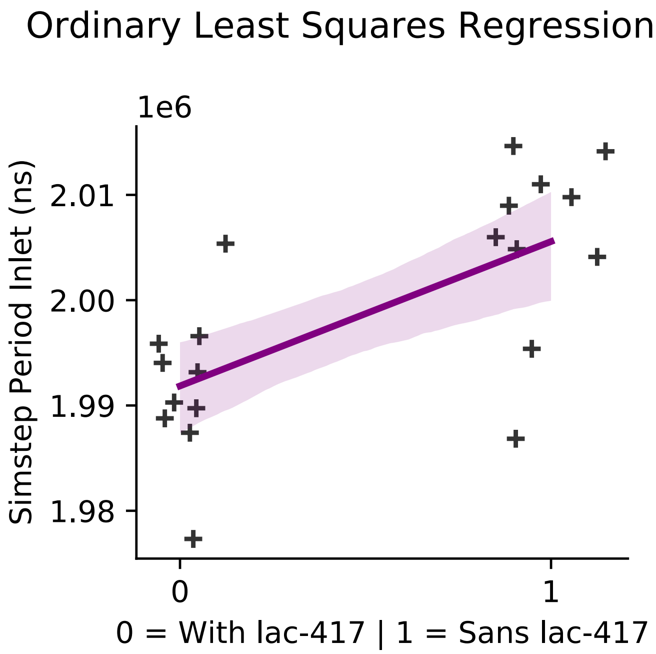


(c) TODO quantile regression



(d) TODO complete quantile regression effect size

Fig. 85: computation vs communication Delivery Clumpiness ordinary least squares regression to estimate mean and quantile regression to estimate median



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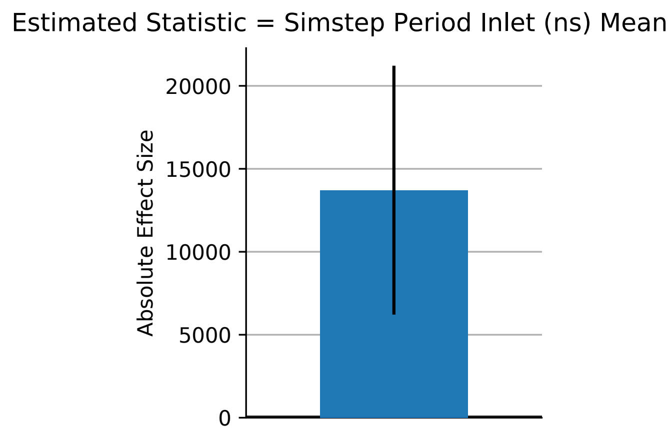

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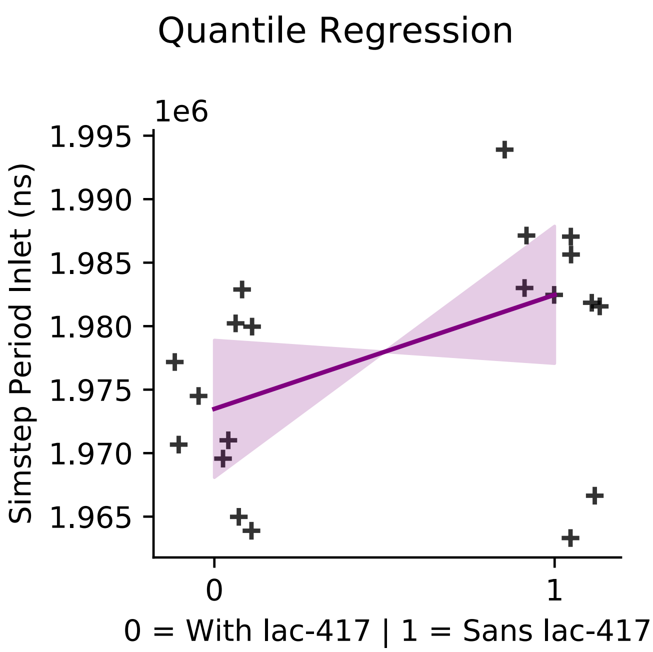

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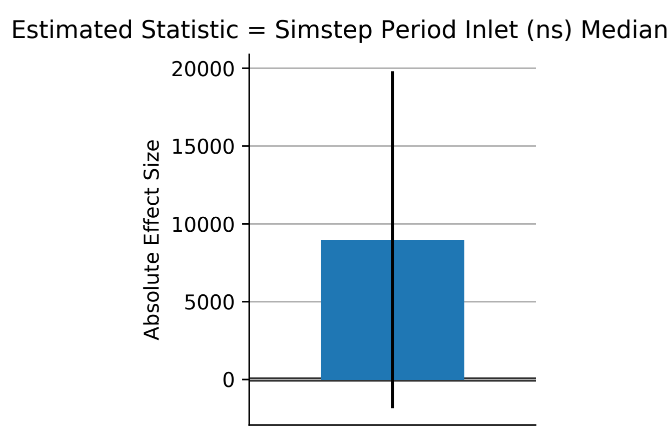
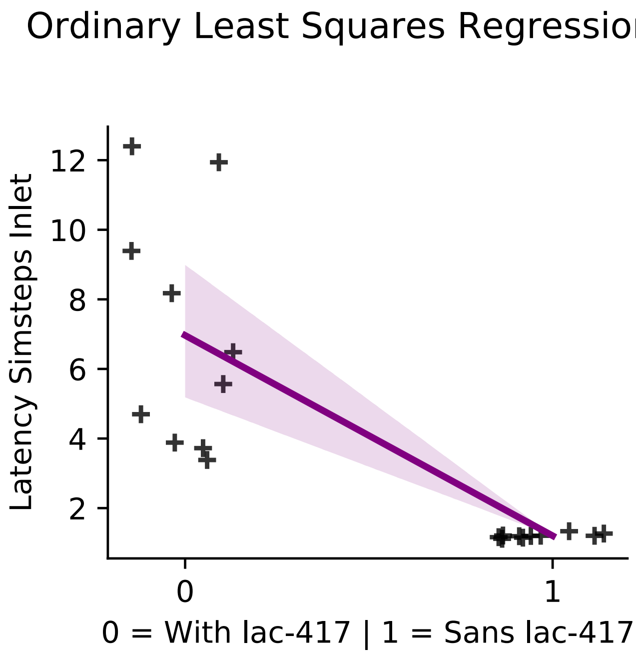


(d) TODO complete quantile regression effect size

Fig. 86: computation vs communication Simstep Period Inlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



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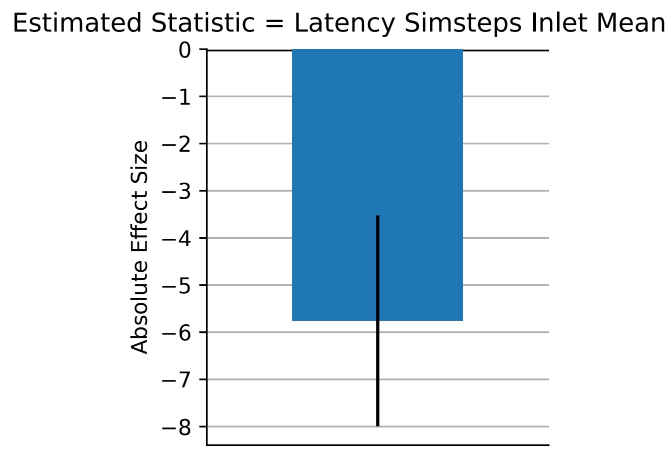

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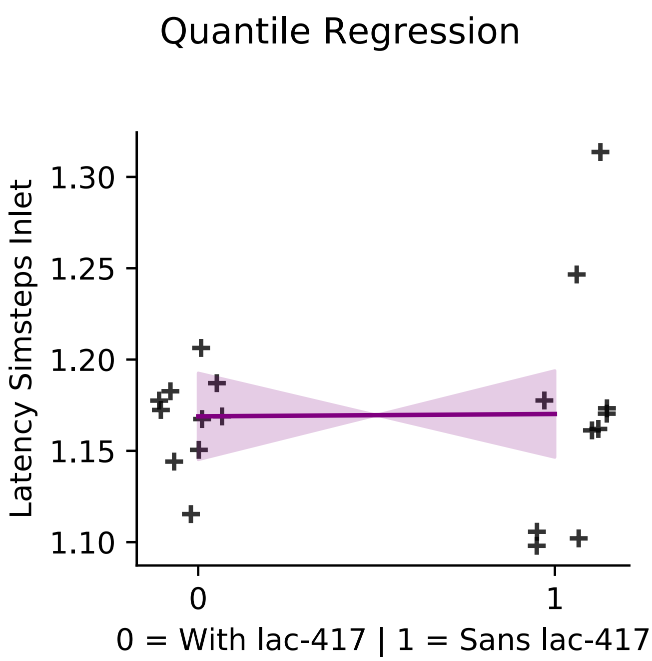

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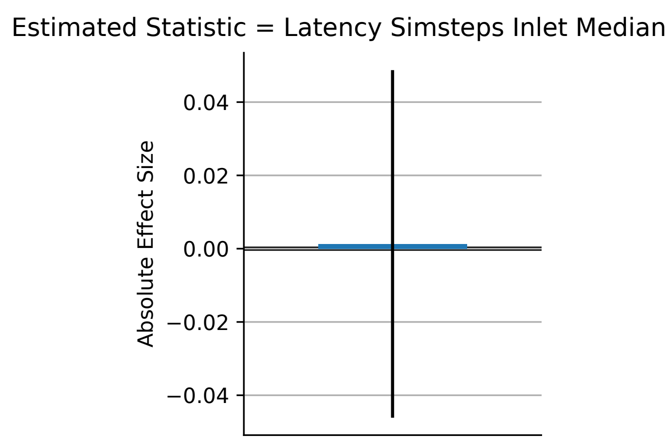
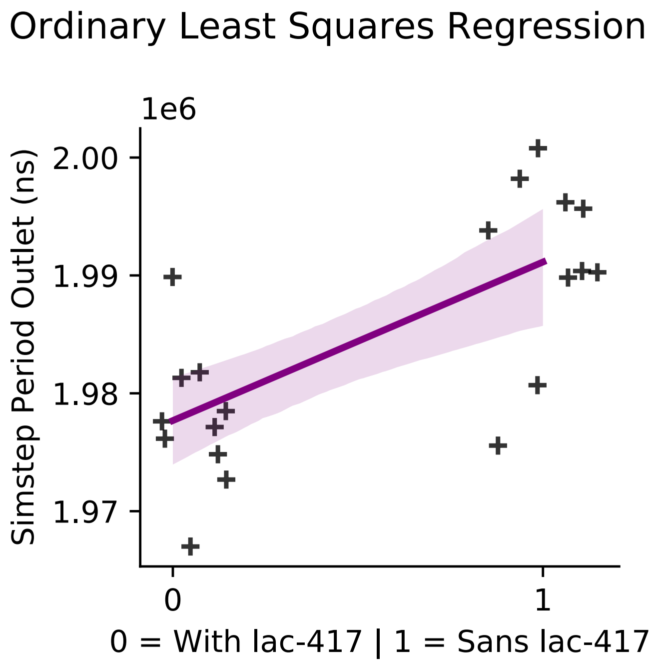
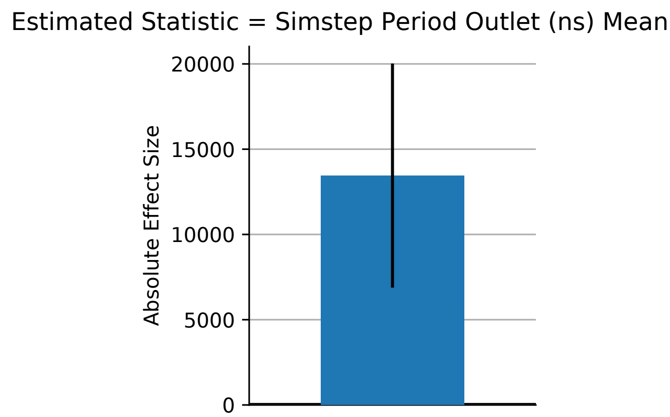


(d) TODO complete quantile regression effect size

Fig. 87: computation vs communication Latency Simsteps Inlet ordinary least squares regression to estimate mean and quantile regression to estimate median



(a) TODO complete ordinary regression



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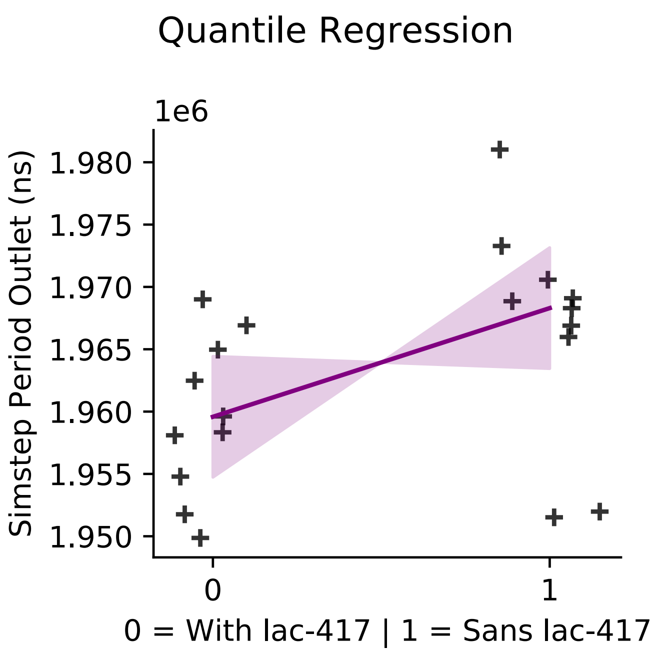
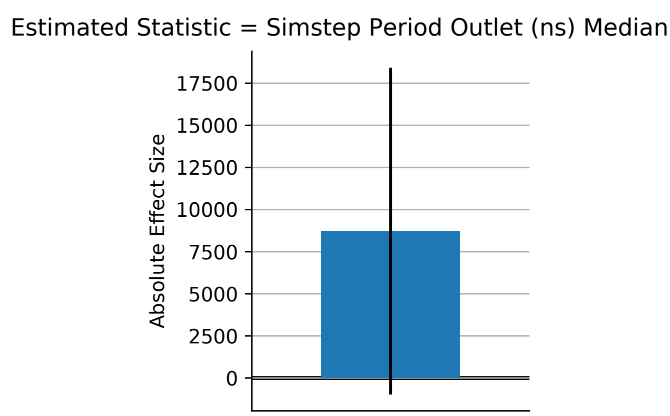
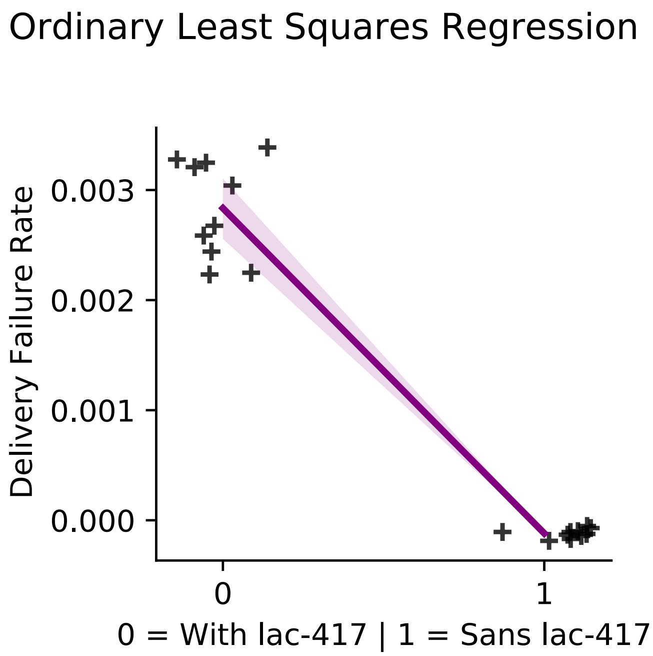


(c) TODO quantile regression



(d) TODO complete quantile regression effect size

Fig. 88: computation vs communication Simstep Period Outlet (ns) ordinary least squares regression to estimate mean and quantile regression to estimate median



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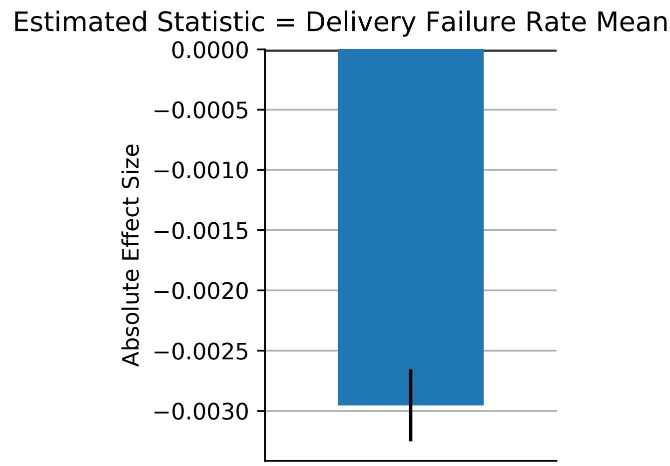

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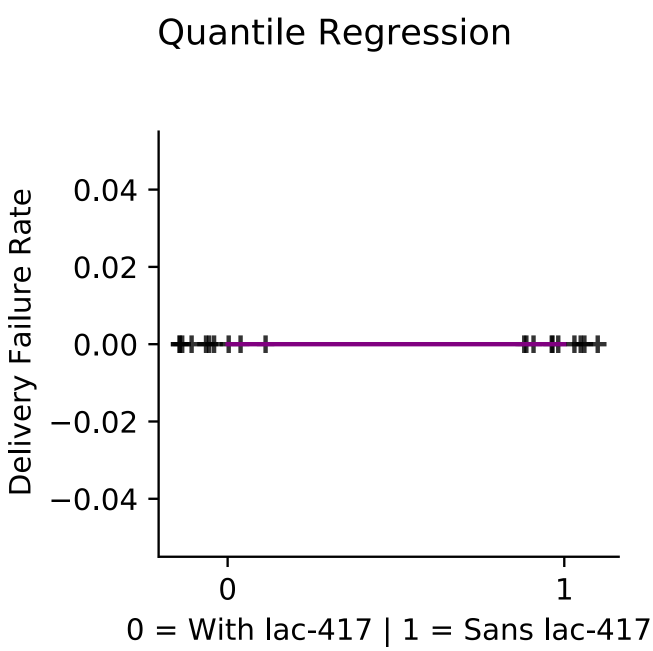

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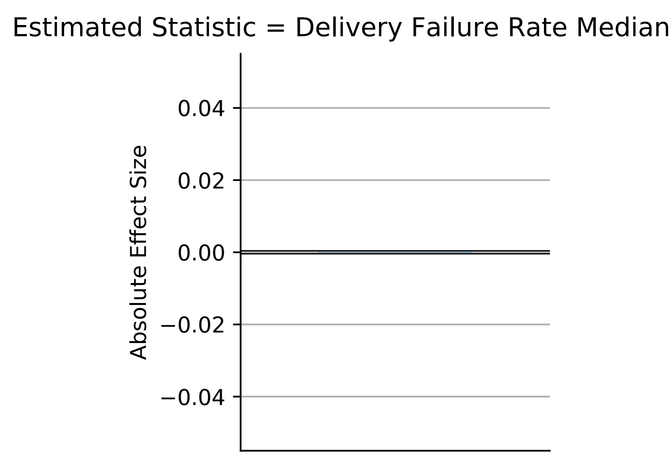

(d) TODO complete quantile regression effect size

Fig. 89: computation vs communication Delivery Failure Rate ordinary least squares regression to estimate mean and quantile regression to estimate median