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Deliverable 9.2b Appendices
Protocol for difference and equivalence testing for ERA

Environmental Risk Assessment of Genetically Modified Organisms:

Simulation study to investigate properties of difference and equivalence testing Appendices

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Description of Appendices

All Appendices

The distribution used to simulate the data is given in the main heading of each page. The abbreviated simulation distribution is also given in the title of each separate plot along with the mean μ of the distribution in parenthesis. The columns across the page either represent 1/ different analyses methods with which the data are analysed, or 2/ different means μ for which results are displayed. In the first case the abbreviated analysis method is also given in the title of each plot after the line (-) symbol. The abbreviations are as follows:

- LN analyses after a Log transformation (1 added to the data before transformation)
- SQ analyses after a Squared Root transformation
- OP Overdispersed Poisson (used for simulation and analyses)
- NB Negative Binomial (used for simulation and analyses)
- P1 Power model with p=1.5 in the variance function (used for simulation and analyses)
- P2 Power model with p=1.7 in the variance function (used for analysis only)
- GM analysis with a Gamma distribution (0.001 added to the data)
- PL Poisson-LogNormal distribution (used for simulating data only)

So for example the title "OP(0.5) - LN" denotes that the data are simulated with an Overdispersed Poisson distribution with mean μ=0.5 and are analysed after a Logarithmic transformation of the data.

The five separate small plots along the y-axis display results for five different values of the coefficient of variation (CV) of the simulation distribution. Note that these five CV values are different for different values of the mean μ. In some plots the real CV values are given, in others they are coded by CV-1 (small) to CV-5 (large). Results in each plot are for the 10 different replication levels 4, 6, 8, 10, 15, 20, 30, 40, 60 and 100 which are given along the x-axis of each small plot.

Appendix 1 A – D: Size of difference test: scaling by the mean deviance or by Pearson

Displays the simulated size (i.e. significance level) of the difference test with α=0.05 when the test statistic (i.e. the deviance difference) is scaled by the mean deviance or Pearson's statistic of the full model. The two scaling's are denoted by respectively "dev" and "pear" in the heading of each plot. Each small plot has a range of 0 to 0.1 along the y-axis. The green line is halfway each small plot and denotes the assumed significance level α=0.05. Red lines are drawn at values 0.033 and 0.067, and these provide a range which could be expected when 1000 datasets are simulated. So simulated sizes within the red lines are OK; such values are depicted by open circles. Values outside this range are denoted by filled circles, while values larger than 0.096 are given by triangles.

Appendix 1 E – H: Size of difference test: comparison different analysis methods

Displays the simulated size of the difference test with α=0.05 for seven different analysis methods. For the analysis models OP, P1, P2 and GM the test statistic (i.e. the deviance difference) is scaled by Pearson's statistic. Each small plot has a range of 0 to 0.1 along the y-axis. The green line is halfway each small plot and denotes the assumed significance level α=0.05. Red lines are drawn at values 0.033 and 0.067, and these provide a range which could

be expected when 1000 datasets are simulated. So simulated sizes within the red lines are OK; such values are depicted by open circles. Values outside this range are denoted by filled circles, while values larger than 0.096 are given by triangles.

Appendix 1 I – L: Power of difference test: comparison of different analysis methods

Displays the power of the difference test for an effect size of Q=0.75 (black dots and line), Q=0.5 (red dots and line) and Q=0.25 (green dots and line). For the analysis models OP, P1, P2 and GM the test statistic (i.e. the deviance difference) is scaled by Pearson's statistic. Each small plot has a range of 0 to 1 along the y-axis. The grey horizontal lines denote power values of 0.25, 0.50 and 0.75. Values for progressive tests, i.e. when the simulated size as given in the corresponding Appendix 1 E-H is larger than the upper limit of 0.067, are not displayed.

Appendix 1 M – P: One minus Coverage Probability of confidence intervals

Displays one minus the coverage probability of 95% confidence intervals after an LN, SQ, Op, NB, P1 and GM analysis. The LN and SQ intervals are generalized confidence intervals constructed by simulation. The other confidence intervals are based on the parameter estimate for the ration of the two means and its standard error. Each small plot has a range of 0 to 0.1 along the y-axis. The green line is halfway each small plot and denotes the assumed α=0.05. The red lines denote values 0.033 and 0.067 which provide a range that could be expected when 1000 datasets are simulated. So simulated sizes within the red lines are OK; such values are denoted by open circles. Values outside this range are denoted by filled circles, while values larger than 0.096 are given by triangles. The latter values indicate that the interval has a larger coverage probability than 5%

Appendix 1 Q – T: Power of LN difference test using the method of Lyles et al

Displays the power of the LN difference test for an effect size of Q=0.75 (black dots and line), Q=0.5 (red dots and line) and Q=0.25 (green dots and line). The dots denote the simulated power, employing 1000 datasets, and the lines are generated by means of the method of Lyles et al which used a single synthetic dataset. Each small plot has a range of 0 to 1 along the y-axis. The grey horizontal lines denote power values of 0.25, 0.50 and 0.75. Simulated powers for progressive tests, i.e. when the simulated size as given in the corresponding Appendix 1 E-H is larger than the upper limit of 0.067, are not displayed.

Appendix 2 A – D: Size of one-sided equivalence test

Displays the size of the one-sided equivalence test with α=0.05 for a limit of concern L which is equal to the effect size Q=0.75, Q=0.5 and Q=0.25. Each small plot has a range of 0 to 0.1 along the y-axis. The green line is halfway each small plot and denotes the assumed α=0.05. The red lines denote values 0.033 and 0.067 which provide a range that could be expected when 1000 datasets are simulated. So simulated sizes within the red lines are OK; such values are depicted by open circles. Values outside this range are denoted by filled circles, while values larger than 0.096 are given by triangles.

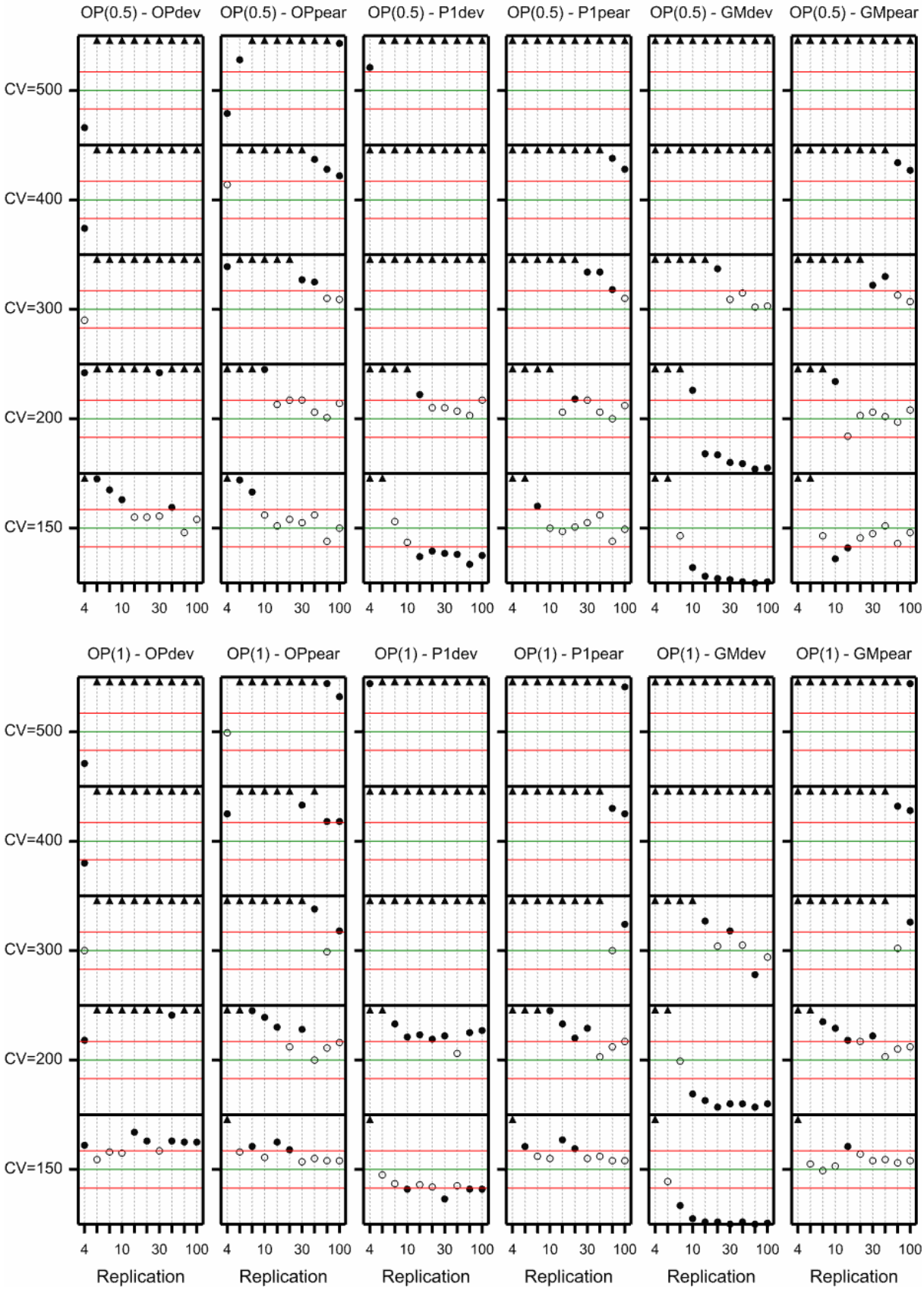
Appendix 2 E – H: Power of one-sided equivalence test

Displays the power of the one-sided equivalence test for a hypothetical limit of concern of L=0.5 and α=0.05 for effect sizes Q=1, Q=0.75, Q=0.5 and Q=0.25 as given in the mean heading of each page. Each small plot has a range of 0 to 1 along the y-axis. The red horizontal lines denote power values of 0.25, 0.50 and 0.75. The dark grey area under the black dots denotes the simulated probability of rejecting the null-hypothesis of non-equivalence, i.e. the probability of concluding that the GMO and the comparator are equivalent. The grey area under the red dots denotes the probability of concluding "equivalence more likely than not". The light-grey area under the green dots denotes the probability that the GMO and the comparator samples only consists of zeroes. This can also be viewed as "equivalence more likely than not".

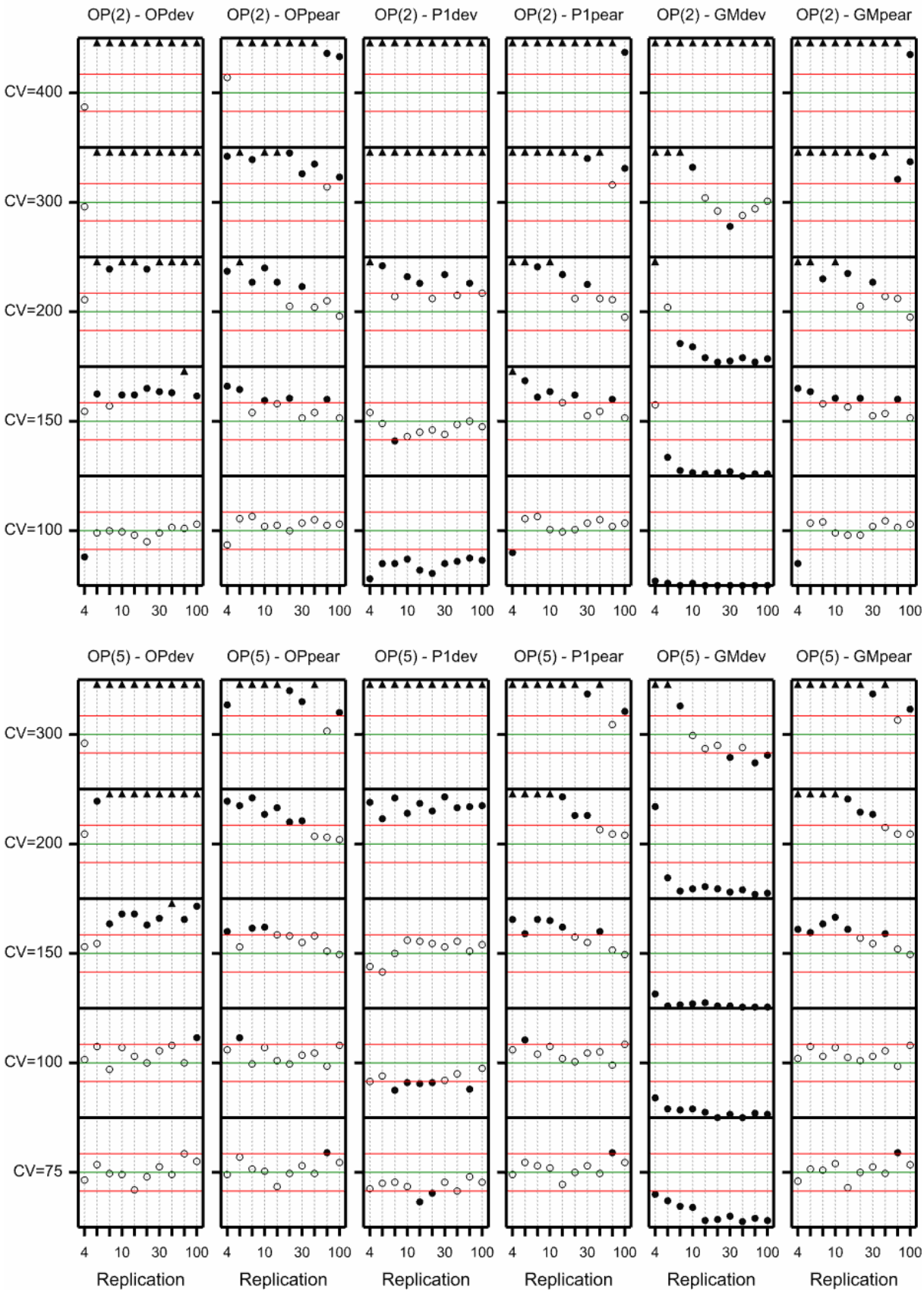
Appendix 2 I – L: Power of OP equivalence test using the method of Lyles et al

Displays the power of the OP one-sided equivalence test, with α=0.05, for effect sizes Q=1, Q=0.75, Q=0.5 and Q=0.25 as given in the mean heading of each page. Limits of concern are L=0.75 (black dots and lines), L=0.5 (red dots and lines), L=0.25 (green dots and lines) and L=0.1 (blue dots and lines). The dots denote the simulated power, employing 1000 datasets, and the lines are generated by means of the method of Lyles et al which used a single synthetic dataset. Each small plot has a range of 0 to 1 along the y-axis. The grey horizontal lines denote power values of 0.25, 0.50 and 0.75.

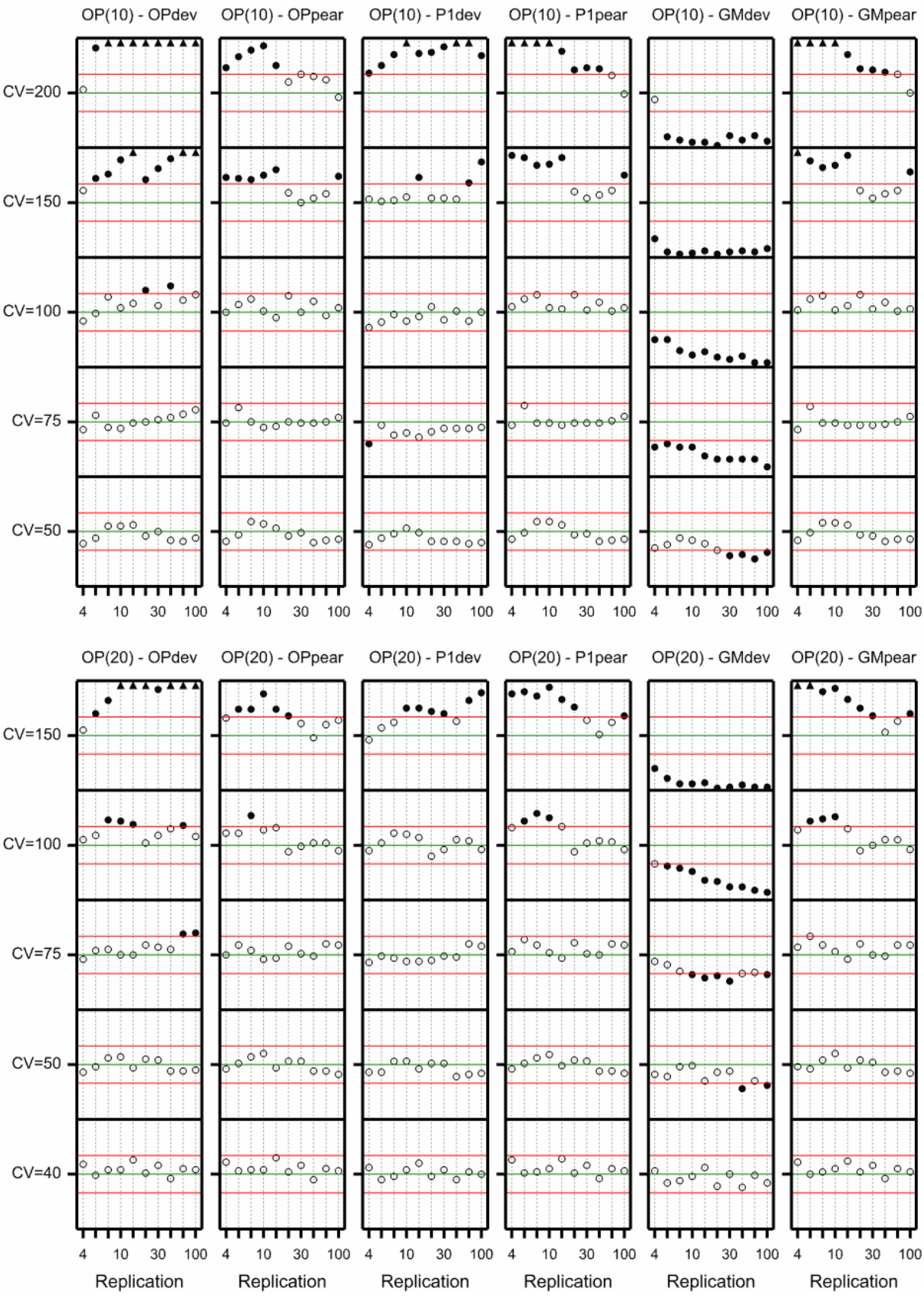
Appendix 1 A1: Size of difference test for Overdispersed Poisson



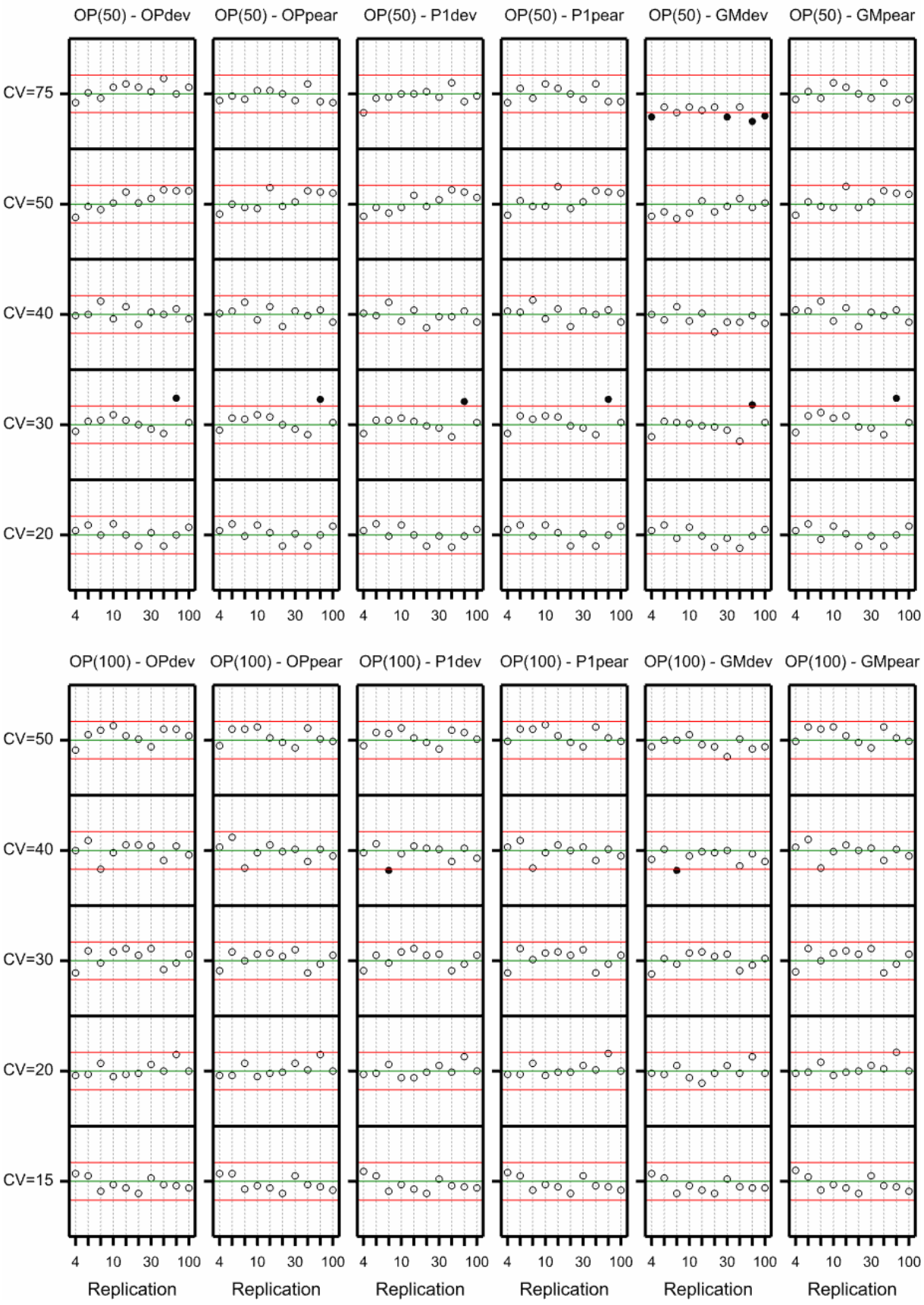
Appendix 1 A2: Size of difference test for Overdispersed Poisson



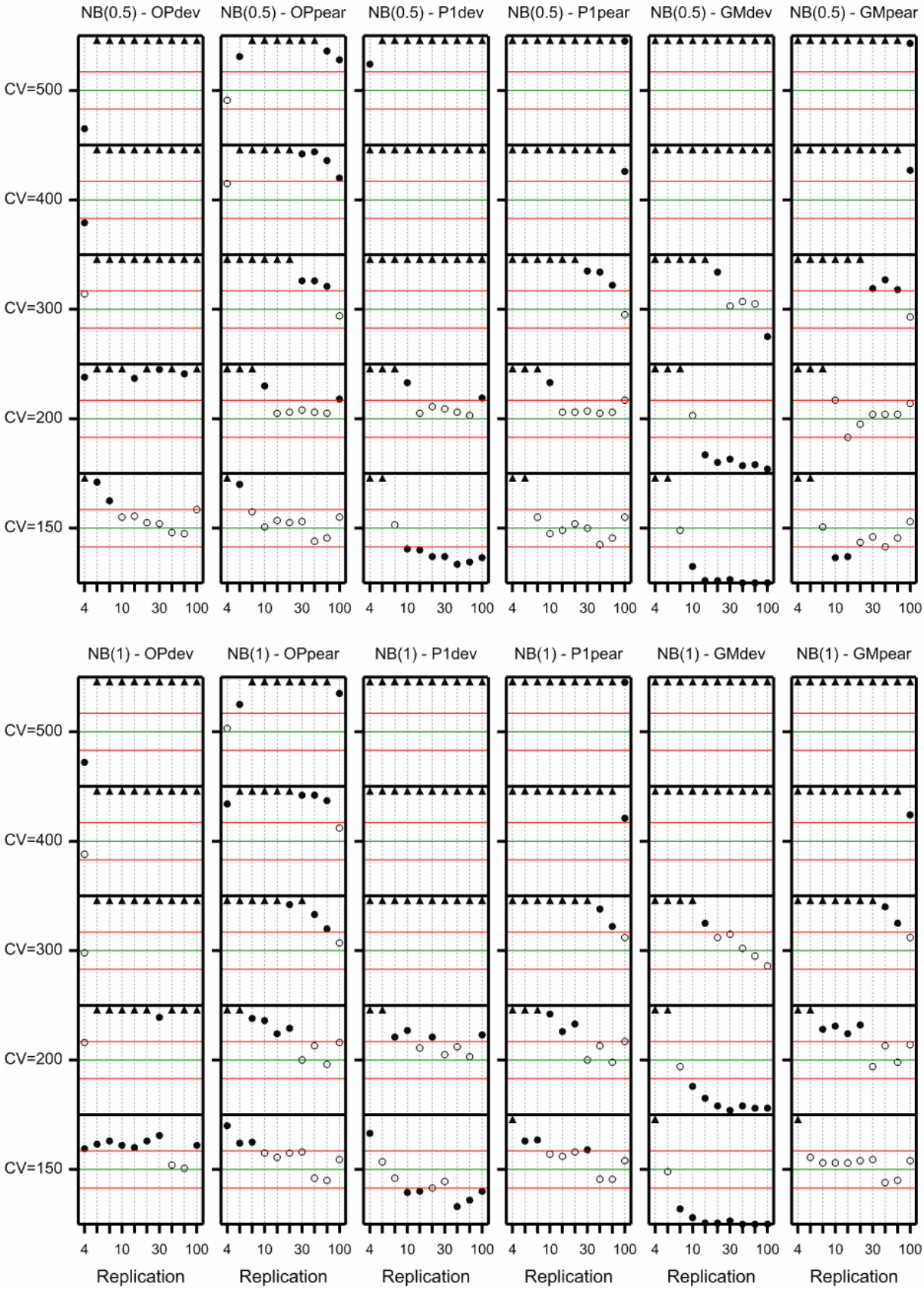
Appendix 1 A3: Size of difference test for Overdispersed Poisson



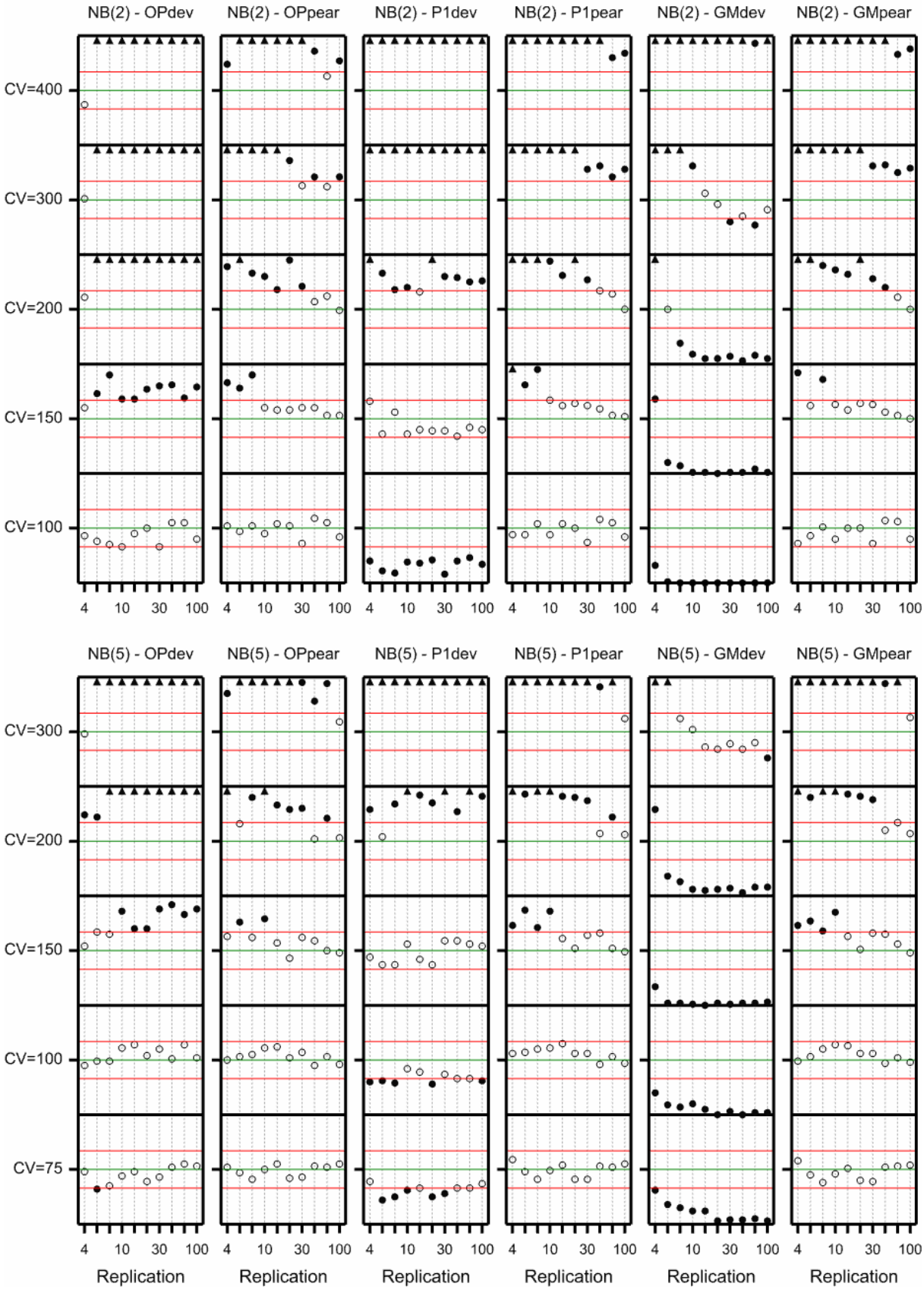
Appendix 1 A4: Size of difference test for Overdispersed Poisson



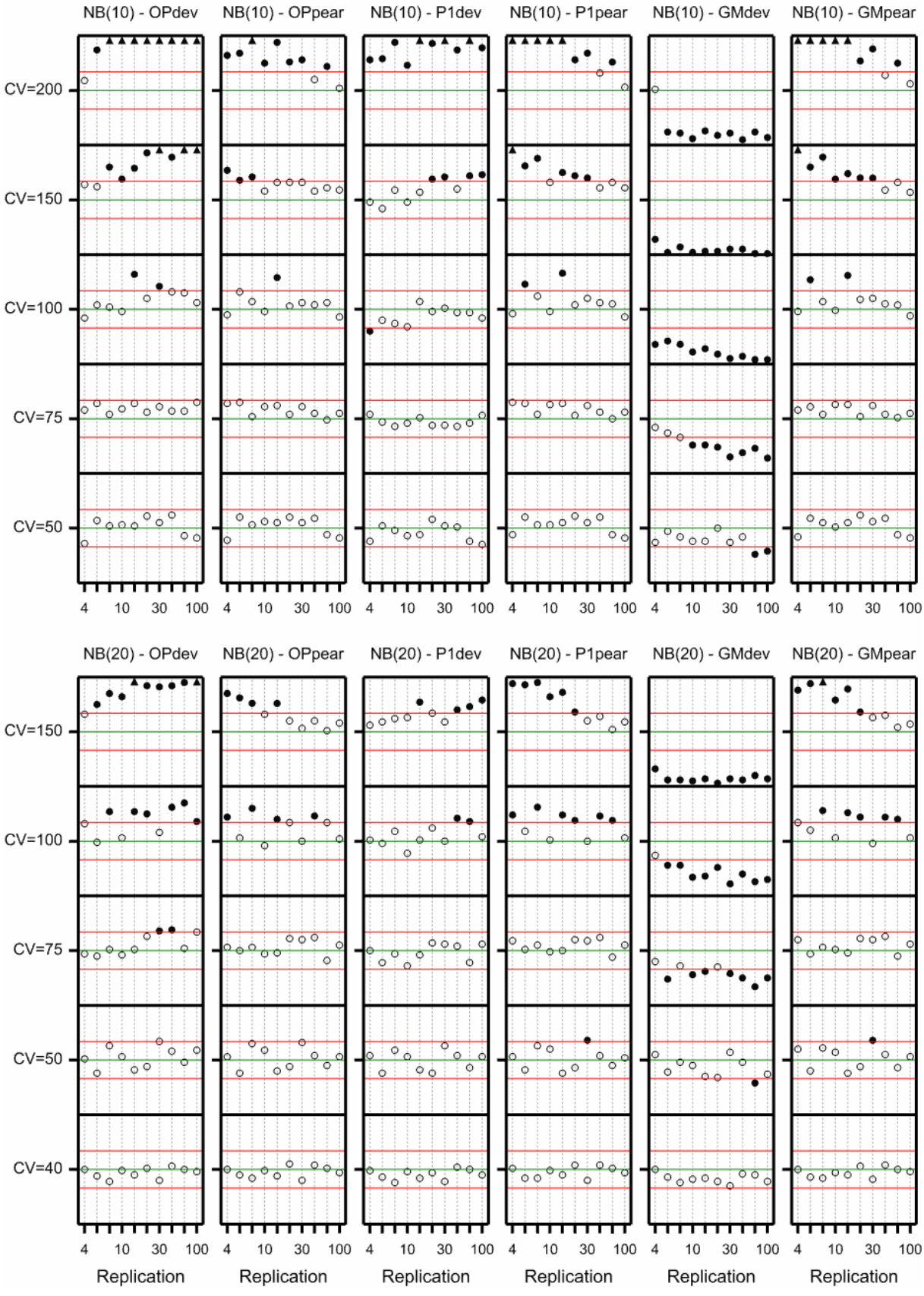
Appendix 1 B1: Size of difference test for Negative Binomial



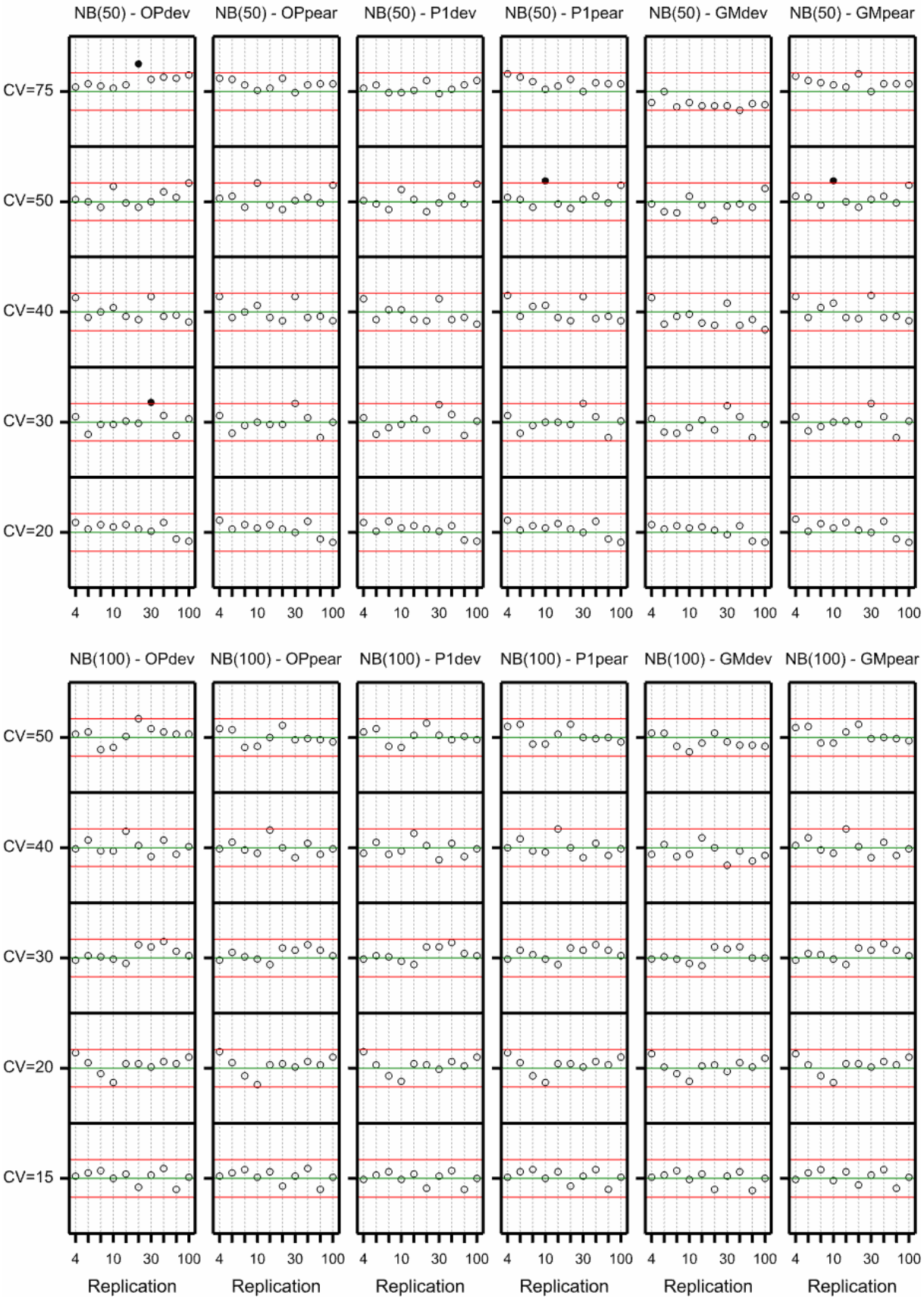
Appendix 1 B2: Size of difference test for Negative Binomial



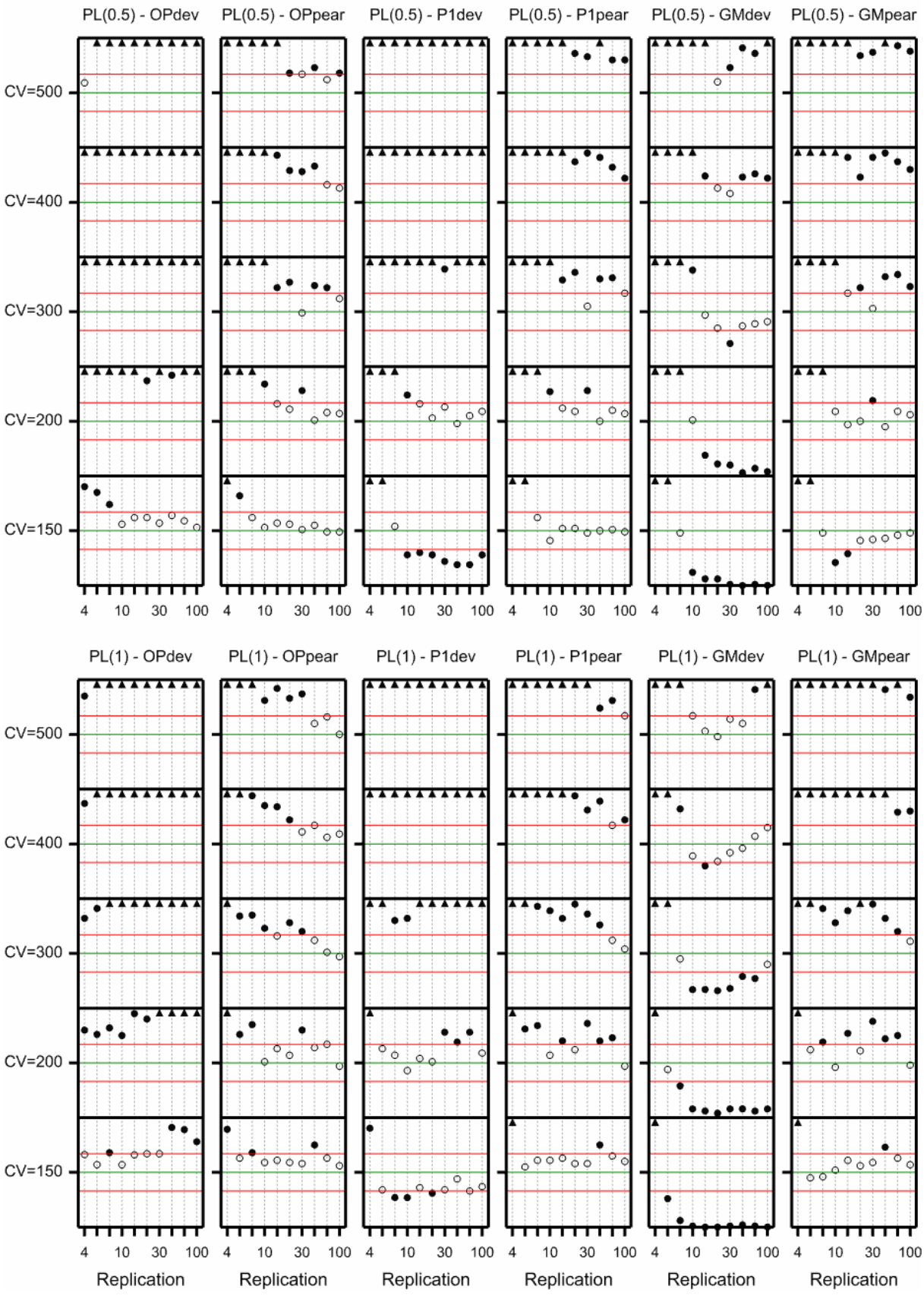
Appendix 1 B3: Size of difference test for Negative Binomial



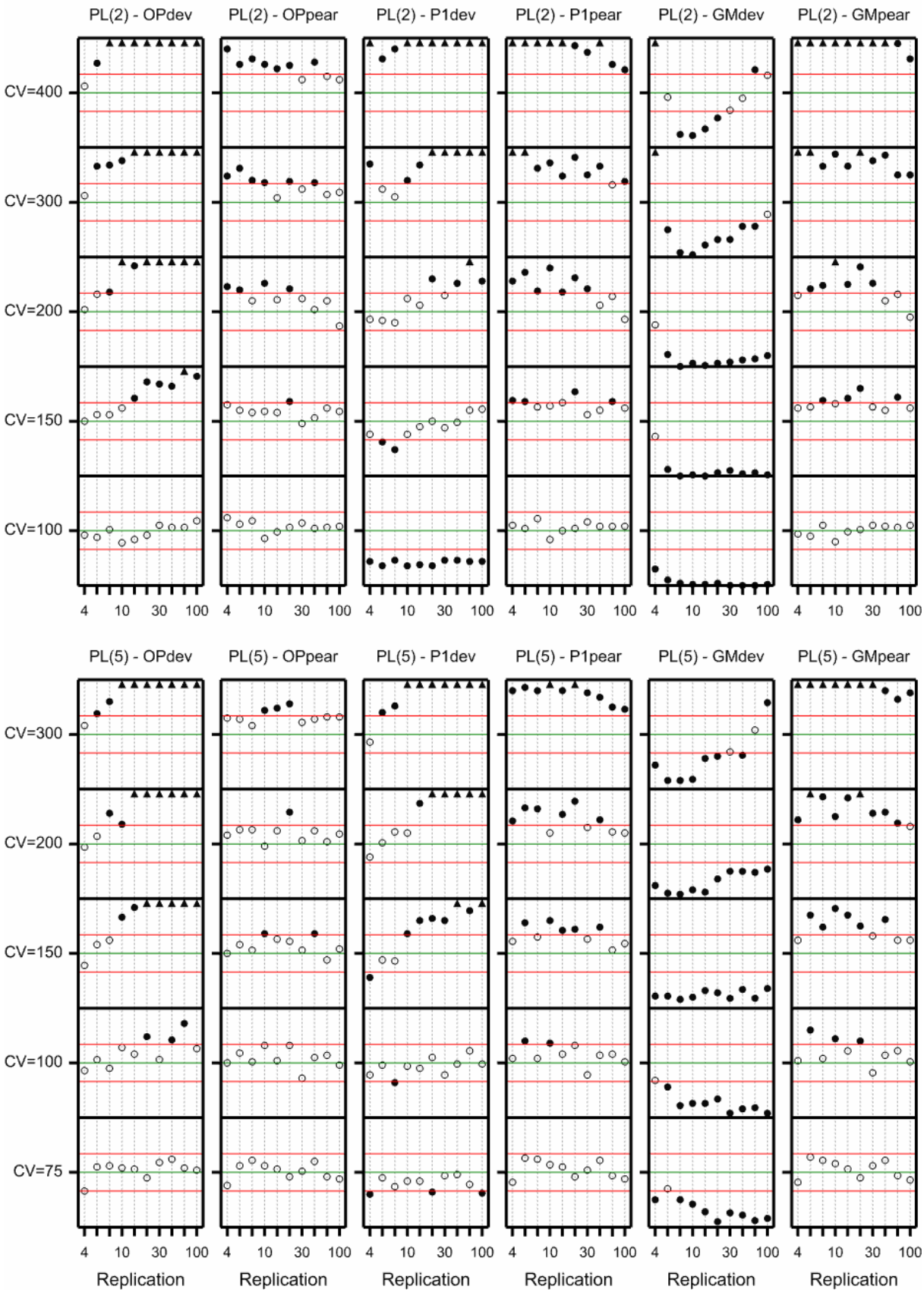
Appendix 1 B4: Size of difference test for Negative Binomial



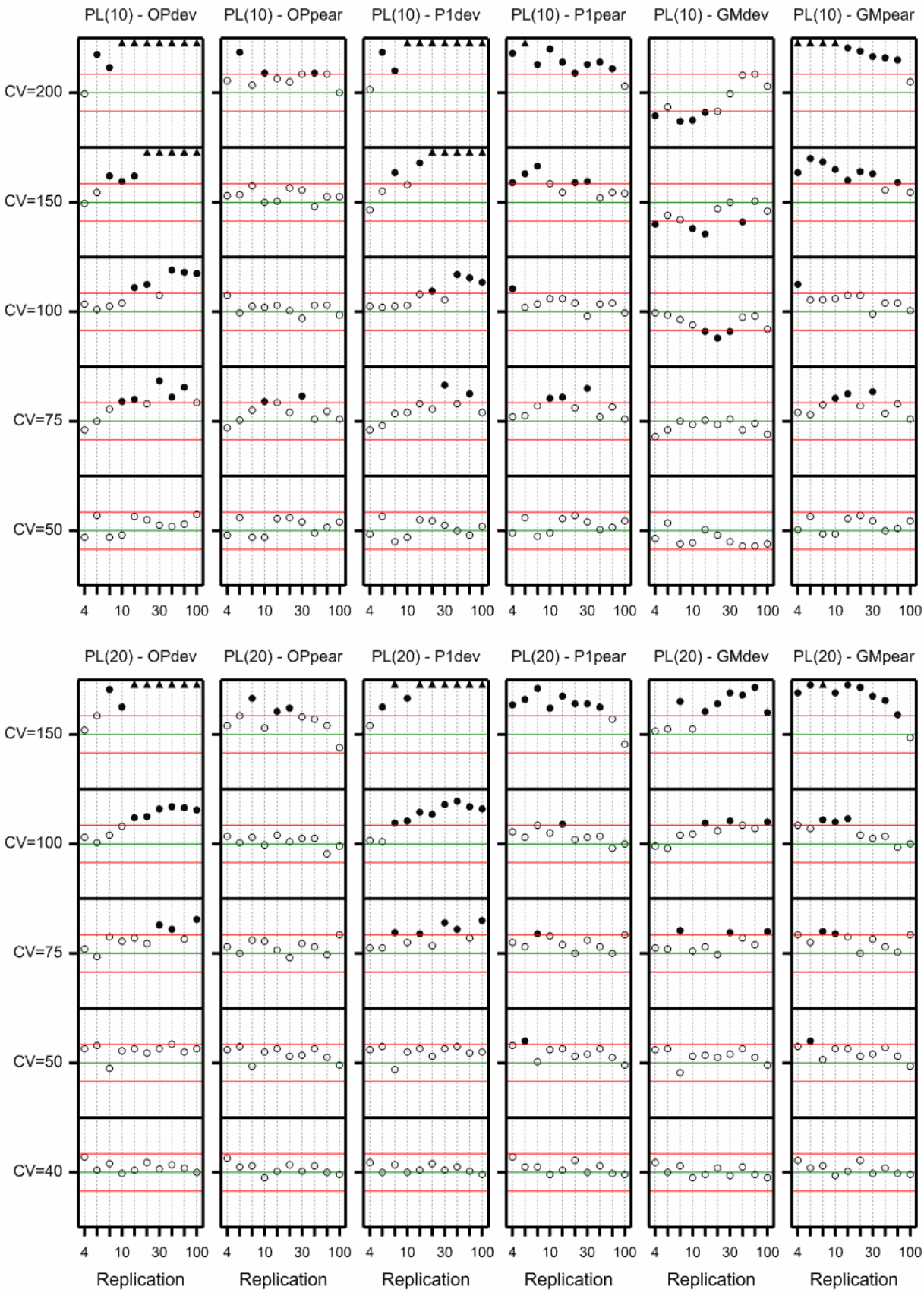
Appendix 1 C1: Size of difference test for Poisson-LogNormal



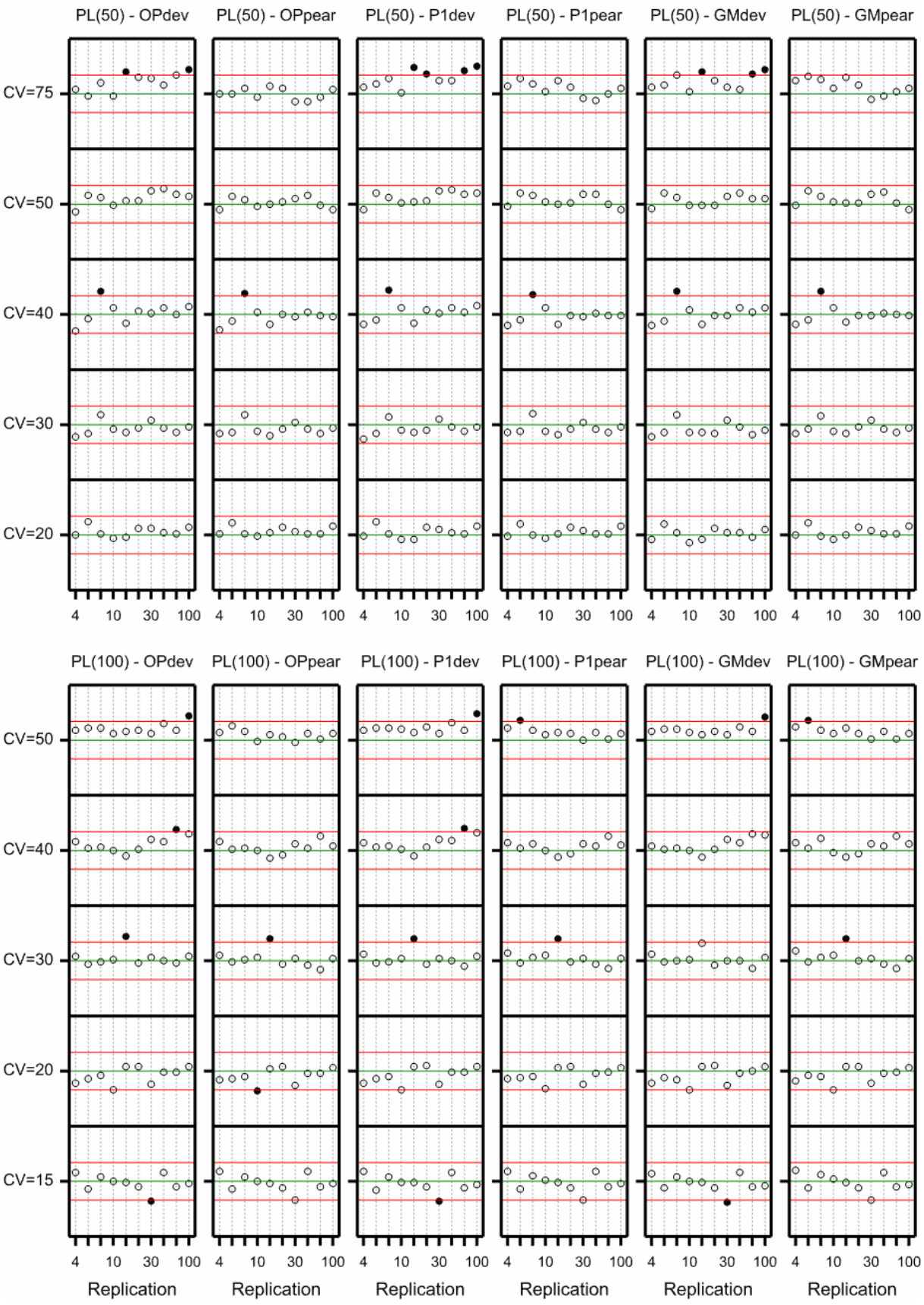
Appendix 1 C2: Size of difference test for Poisson-LogNormal



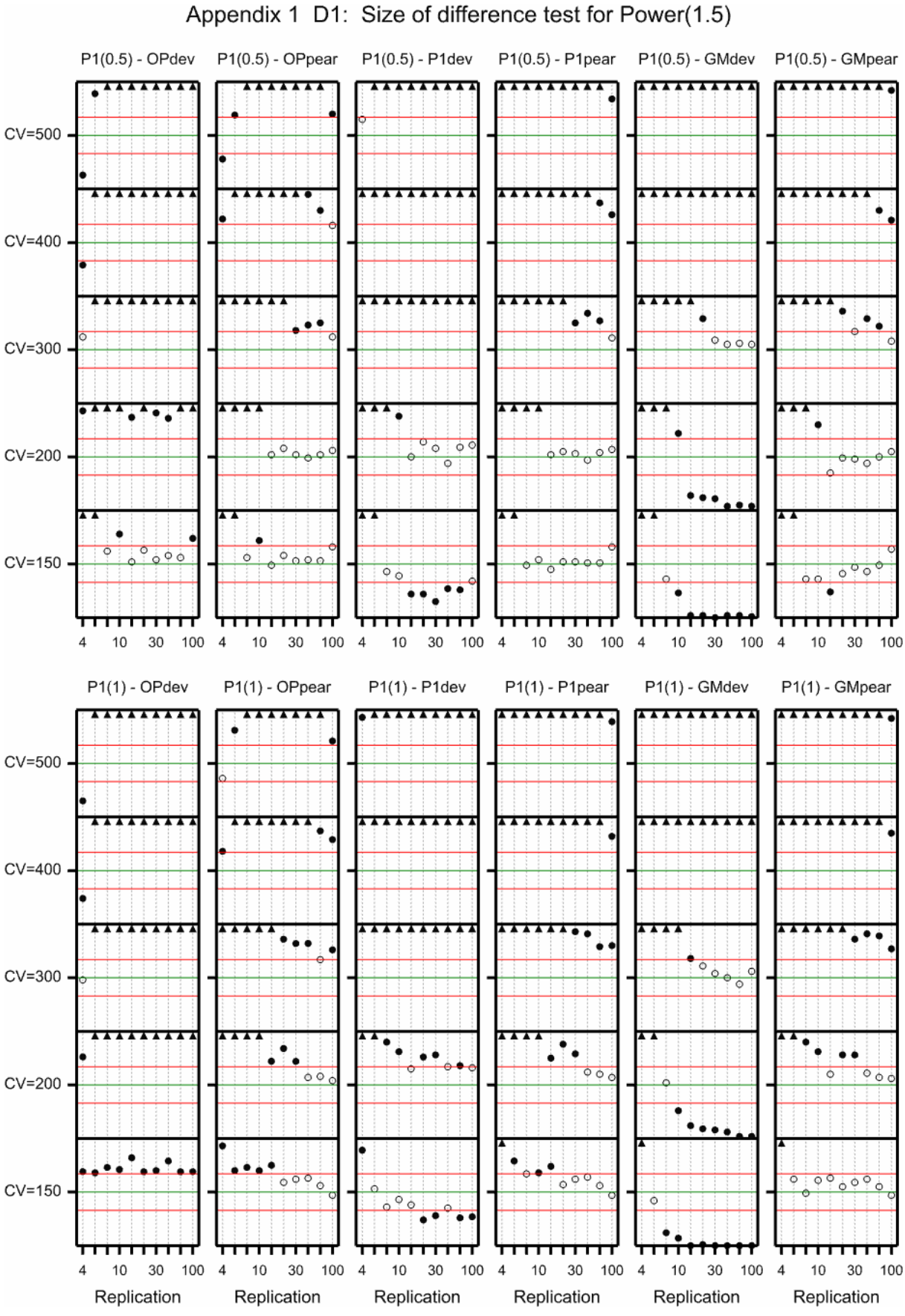
Appendix 1 C3: Size of difference test for Poisson-LogNormal



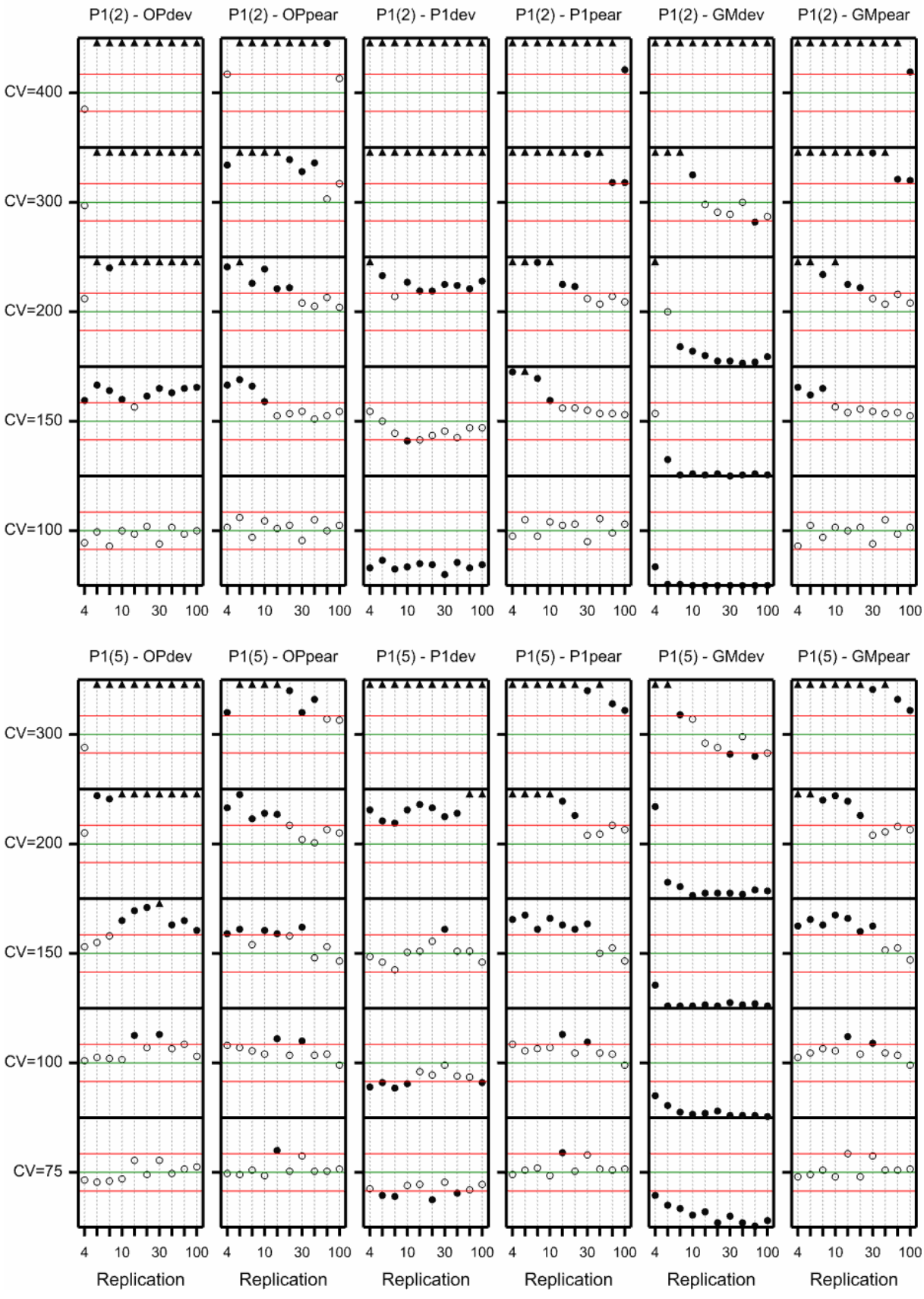
Appendix 1 C4: Size of difference test for Poisson-LogNormal



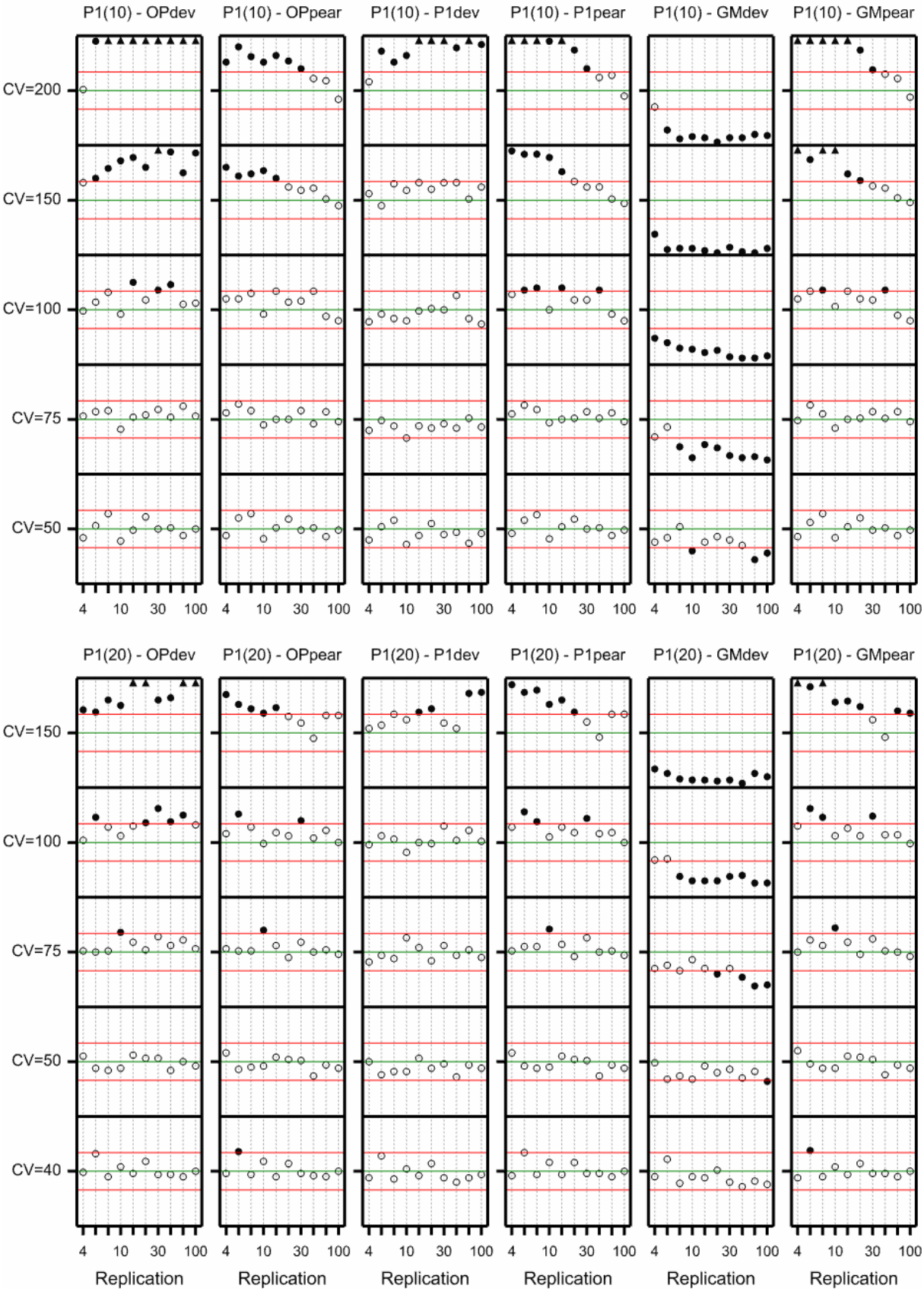
Appendix 1 D1: Size of difference test for Power(1.5)



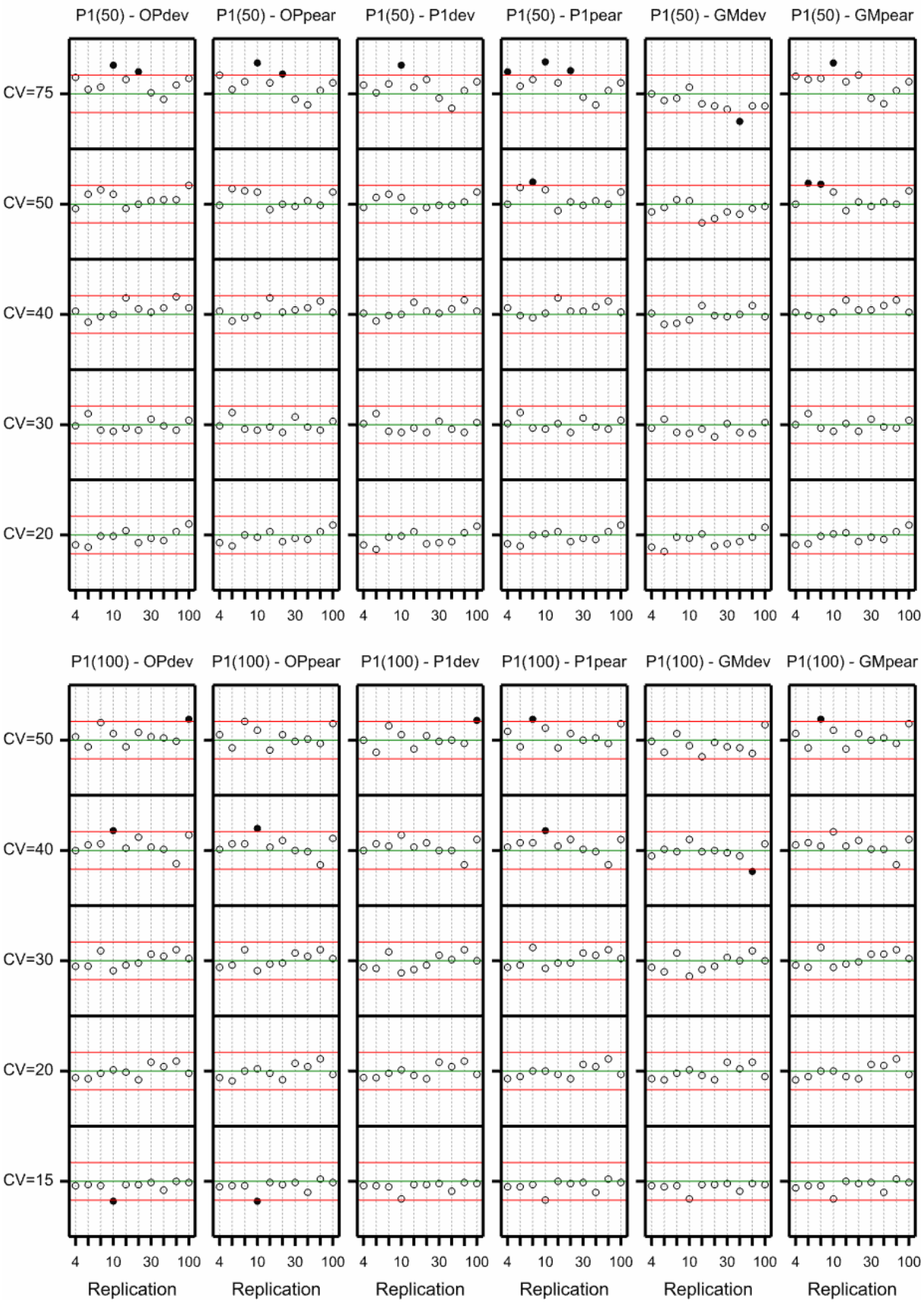
Appendix 1 D2: Size of difference test for Power(1.5)



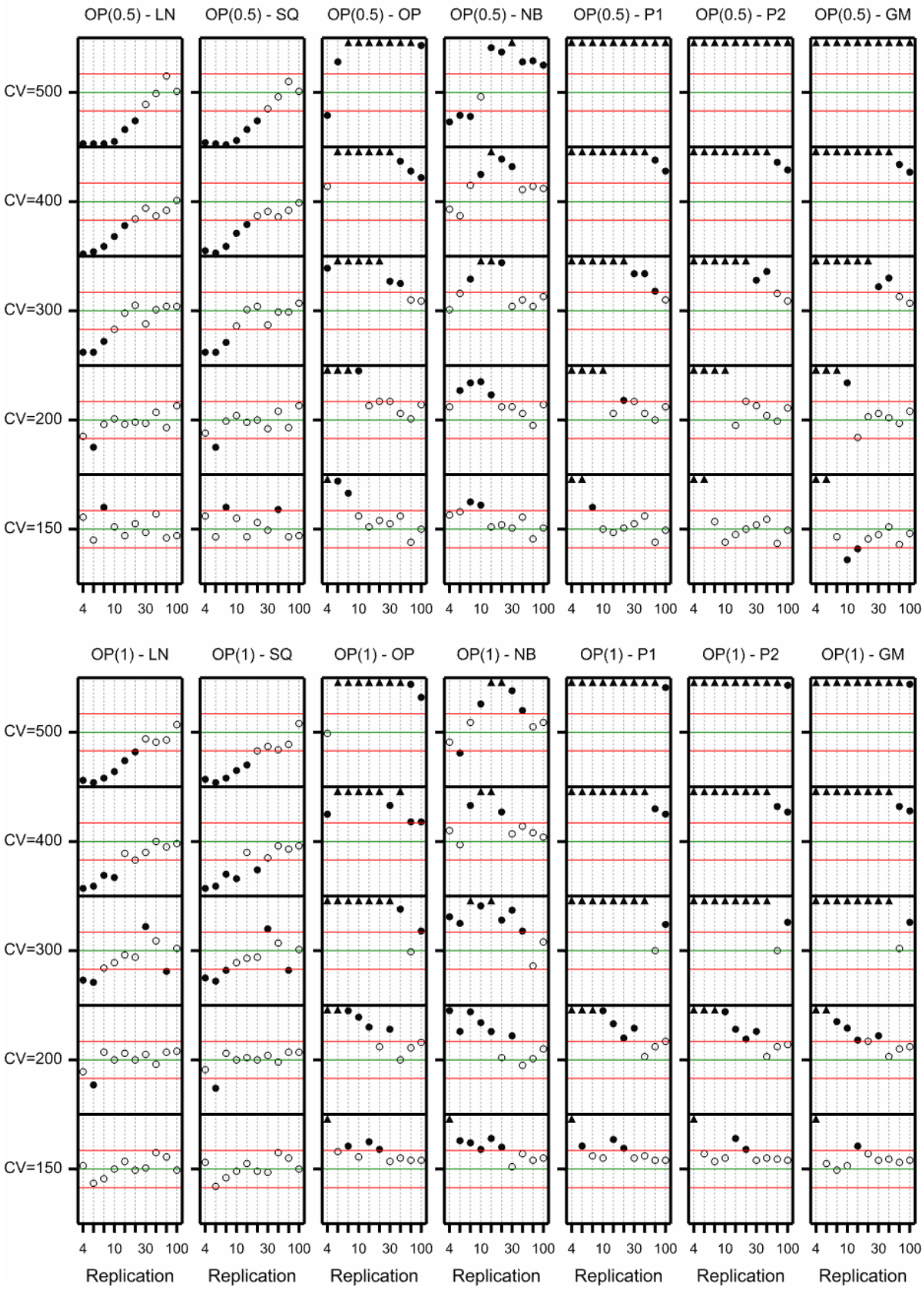
Appendix 1 D3: Size of difference test for Power(1.5)



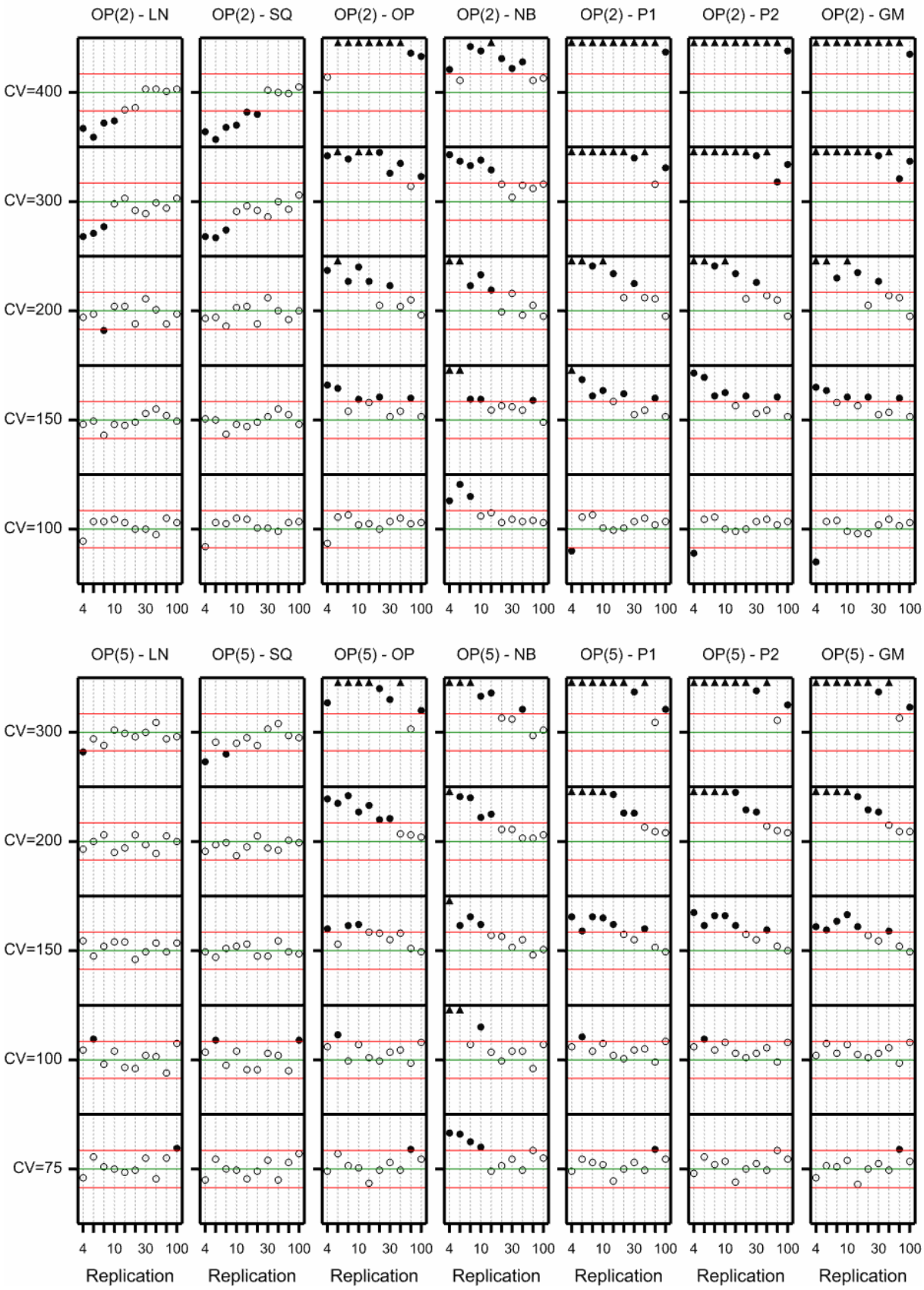
Appendix 1 D4: Size of difference test for Power(1.5)



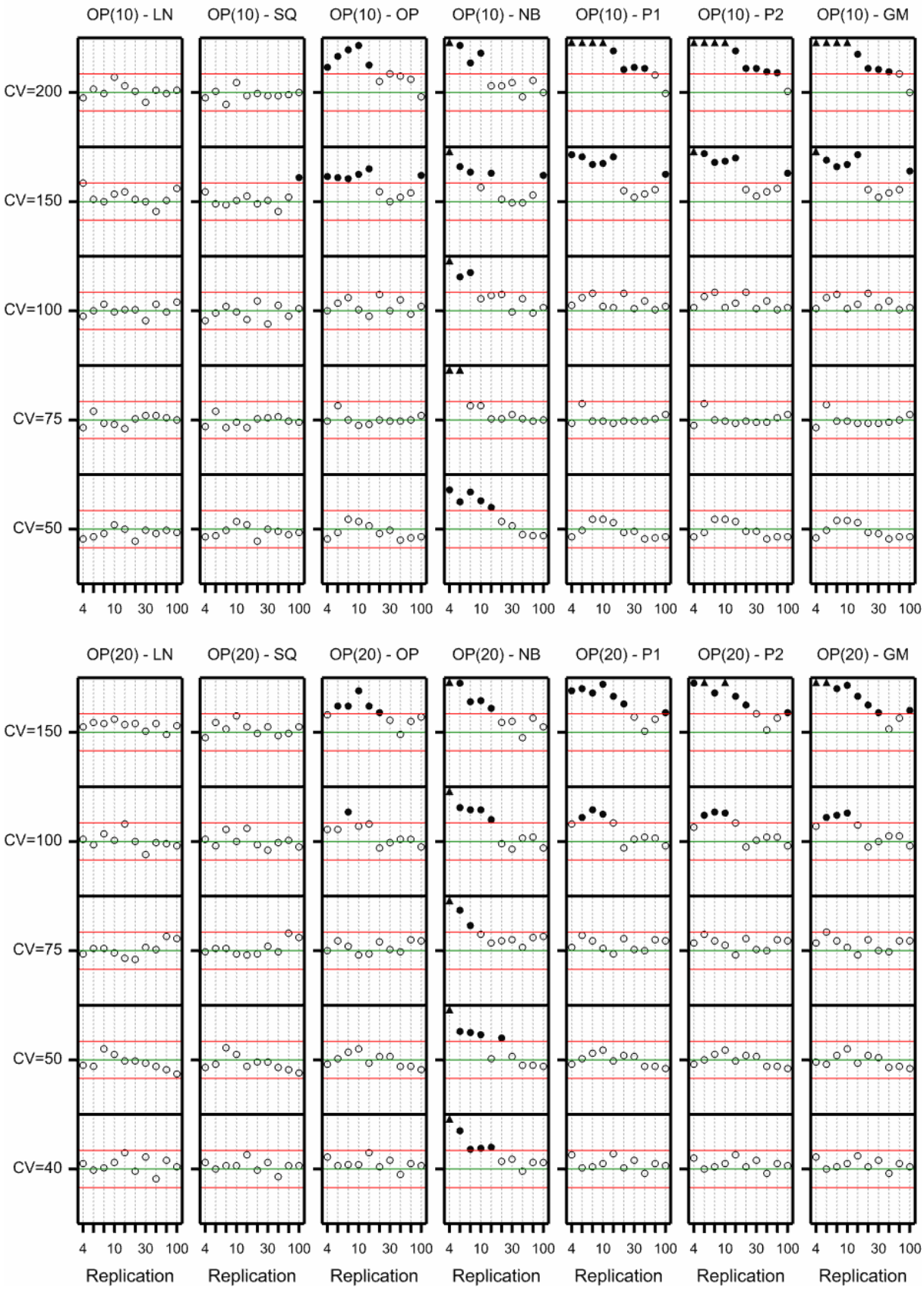
Appendix 1 E1: Size of difference test for Overdispersed Poisson



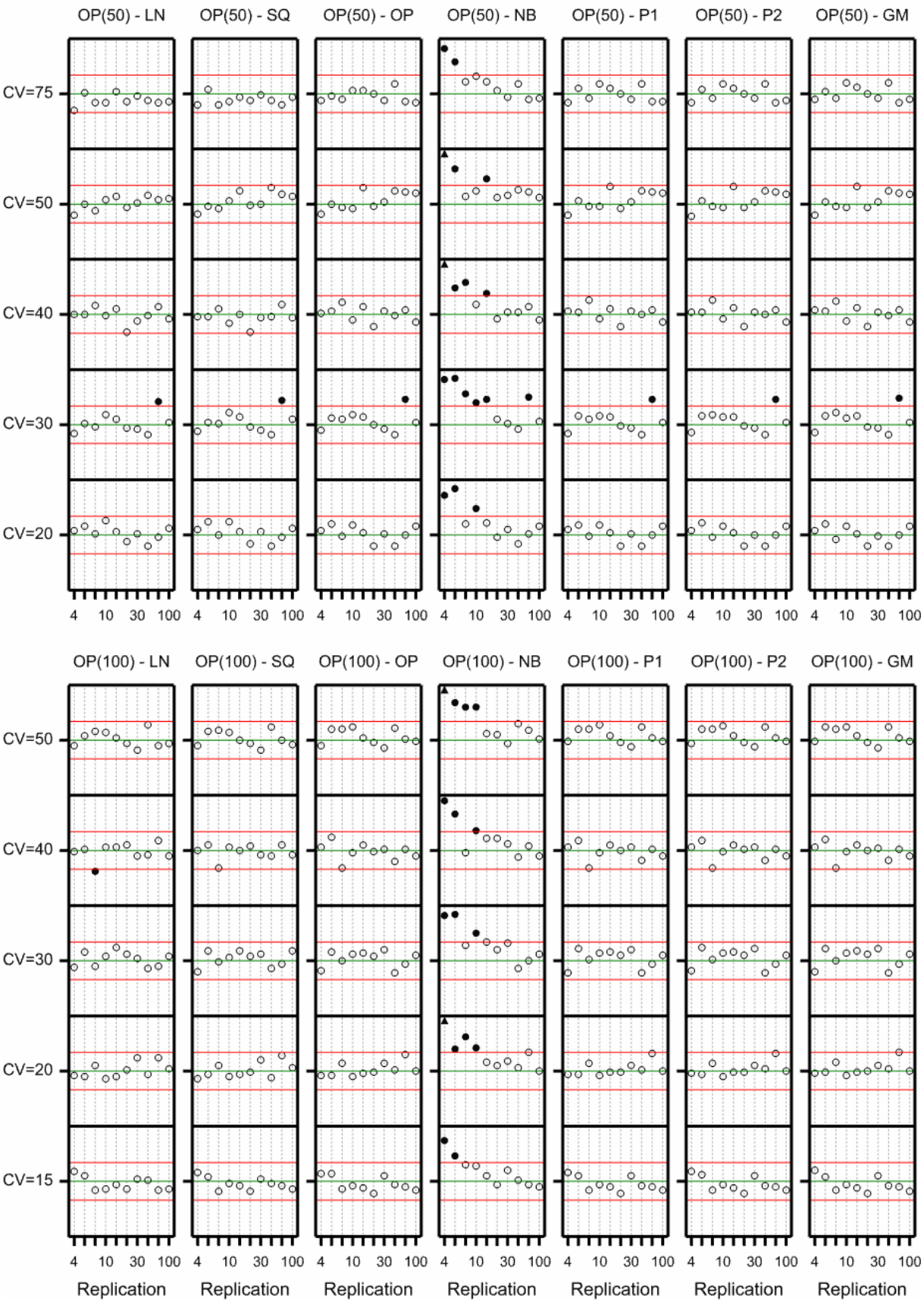
Appendix 1 E2: Size of difference test for Overdispersed Poisson



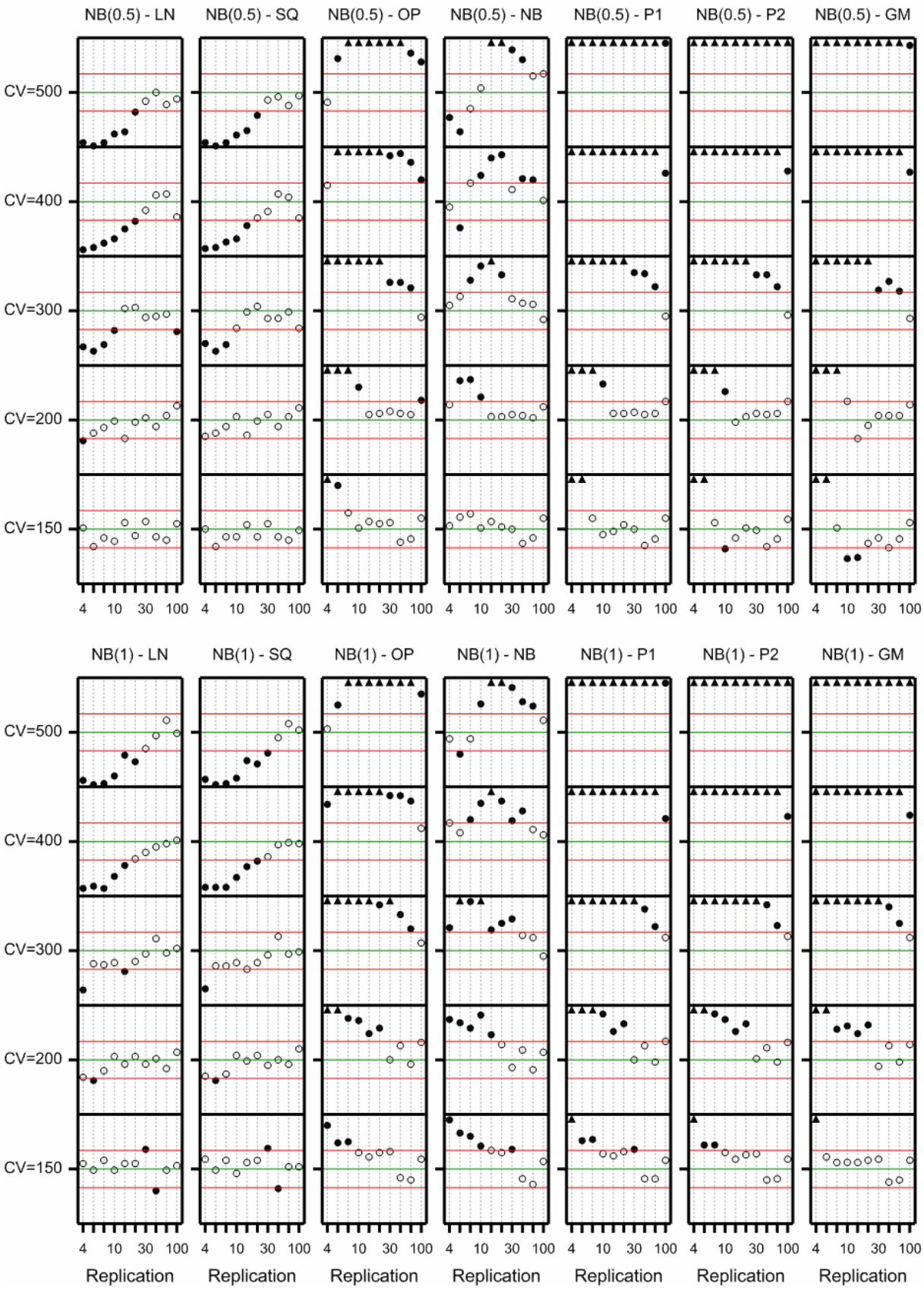
Appendix 1 E3: Size of difference test for Overdispersed Poisson



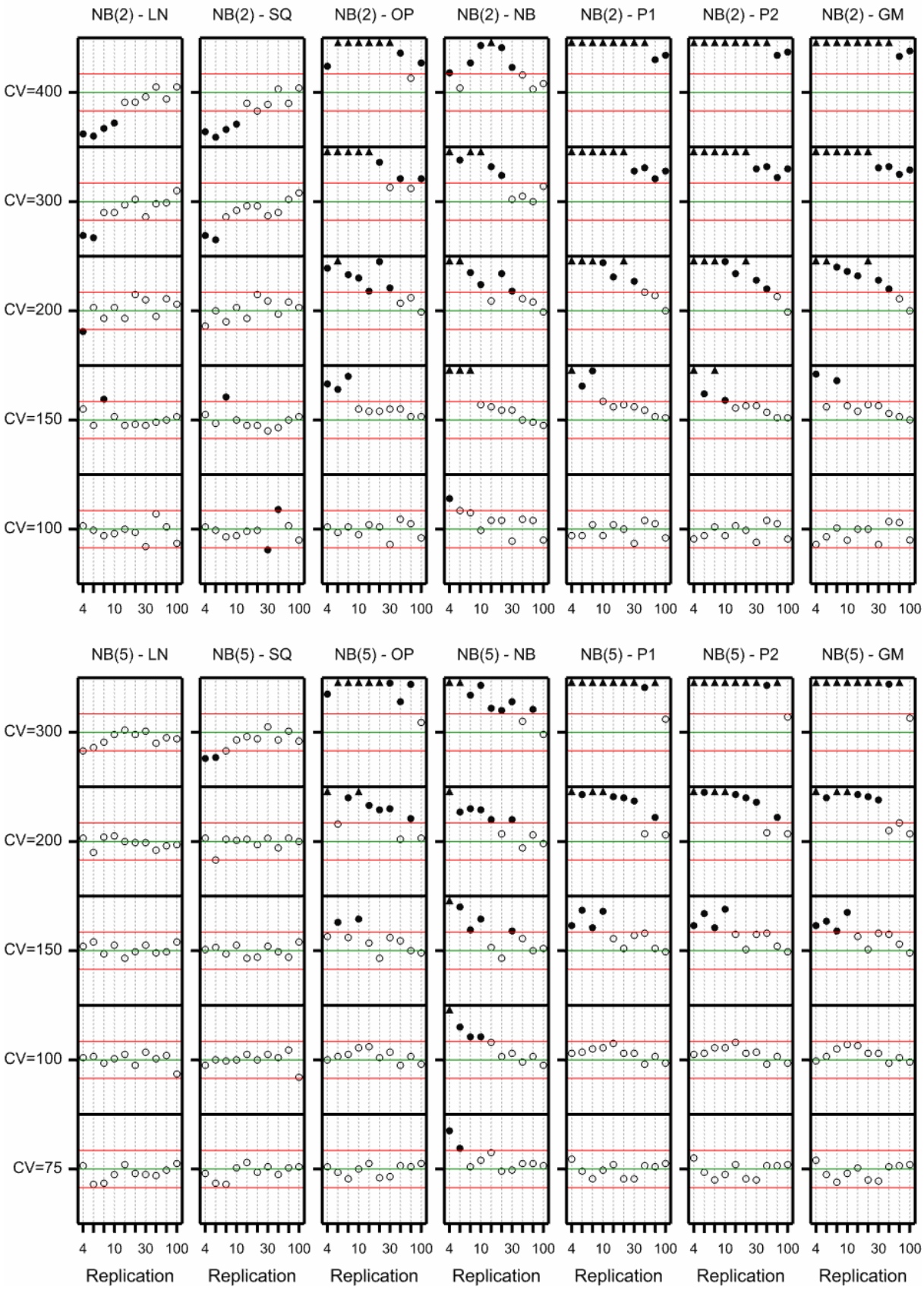
Appendix 1 E4: Size of difference test for Overdispersed Poisson



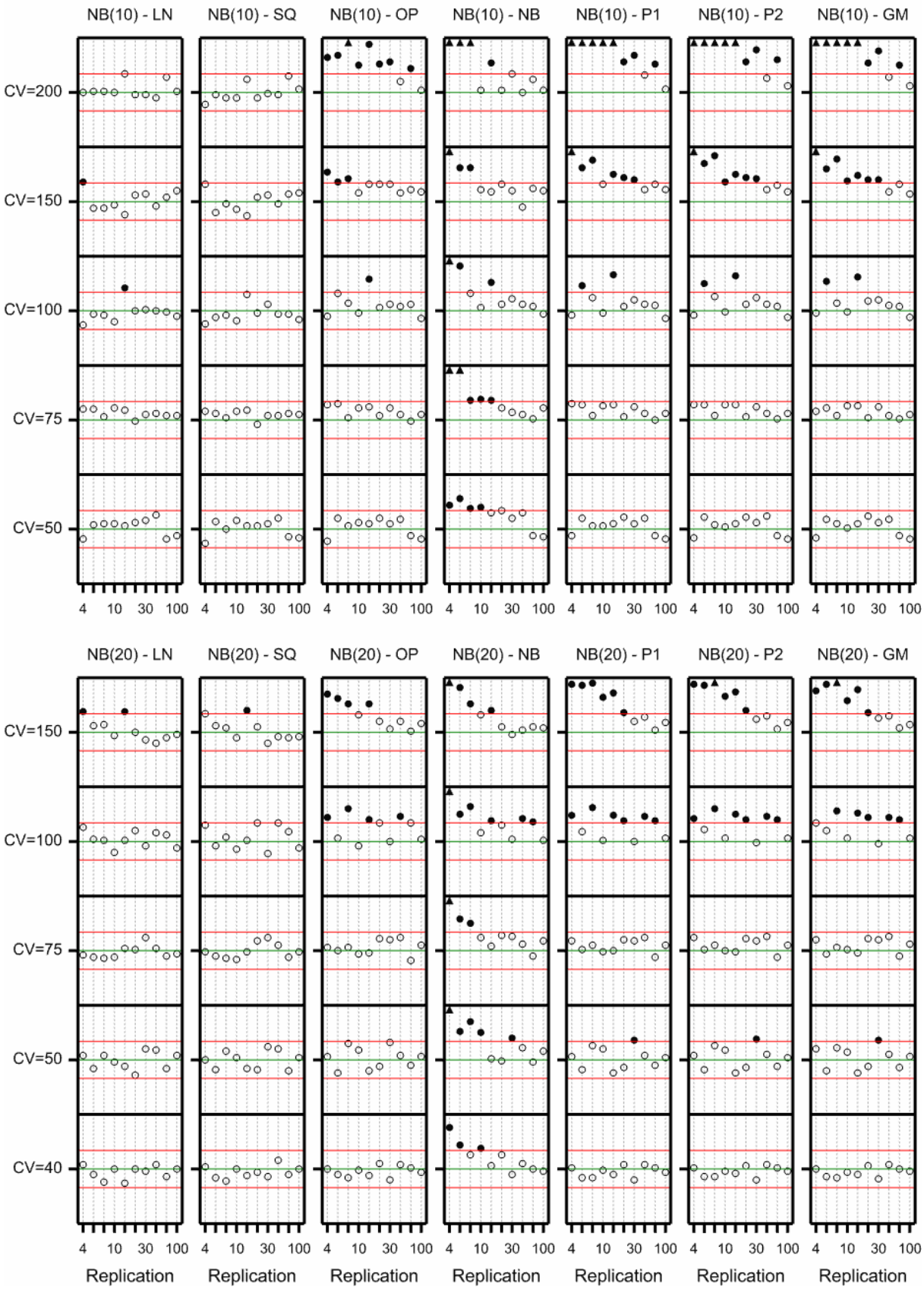
Appendix 1 F1: Size of difference test for Negative Binomial



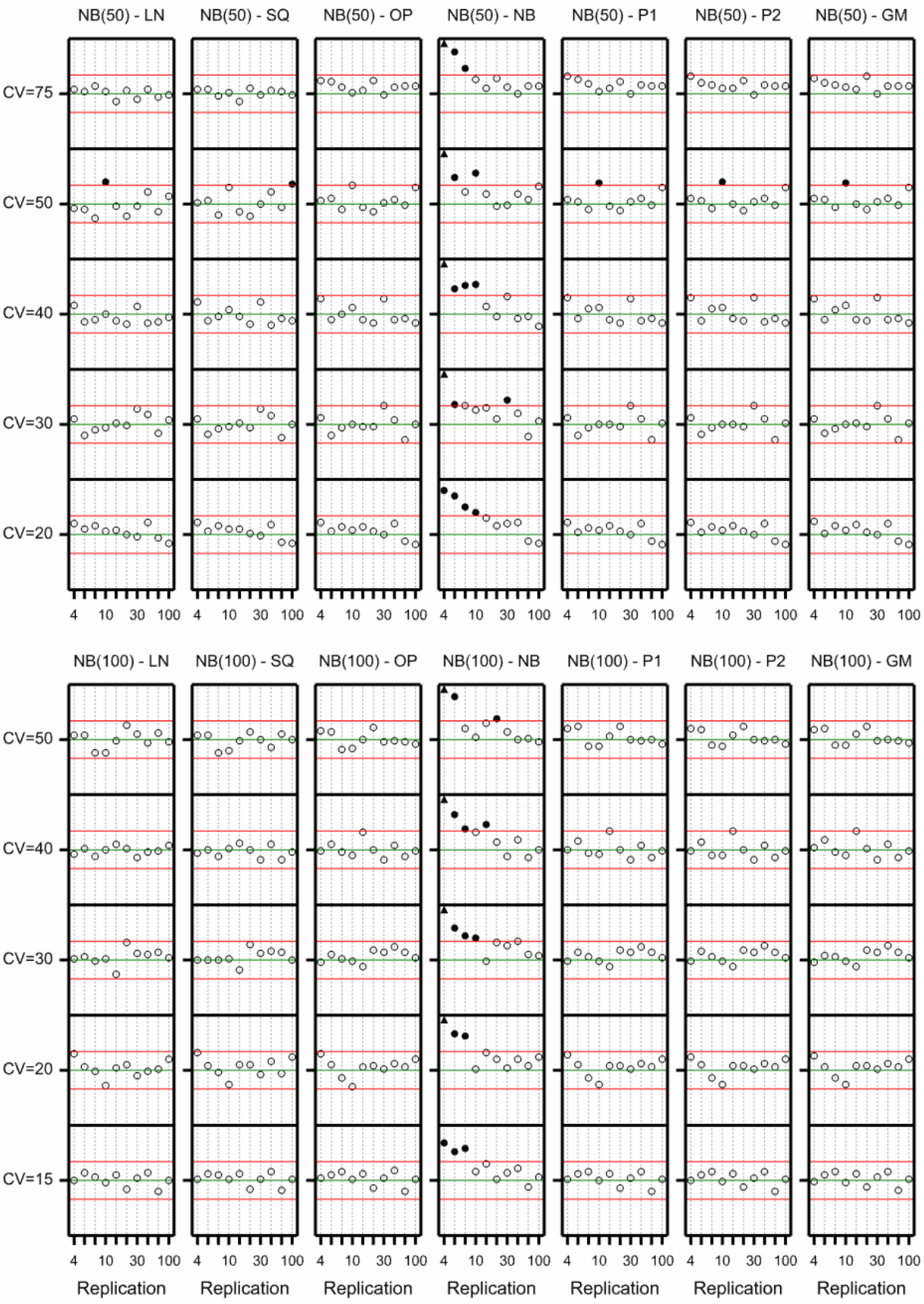
Appendix 1 F2: Size of difference test for Negative Binomial



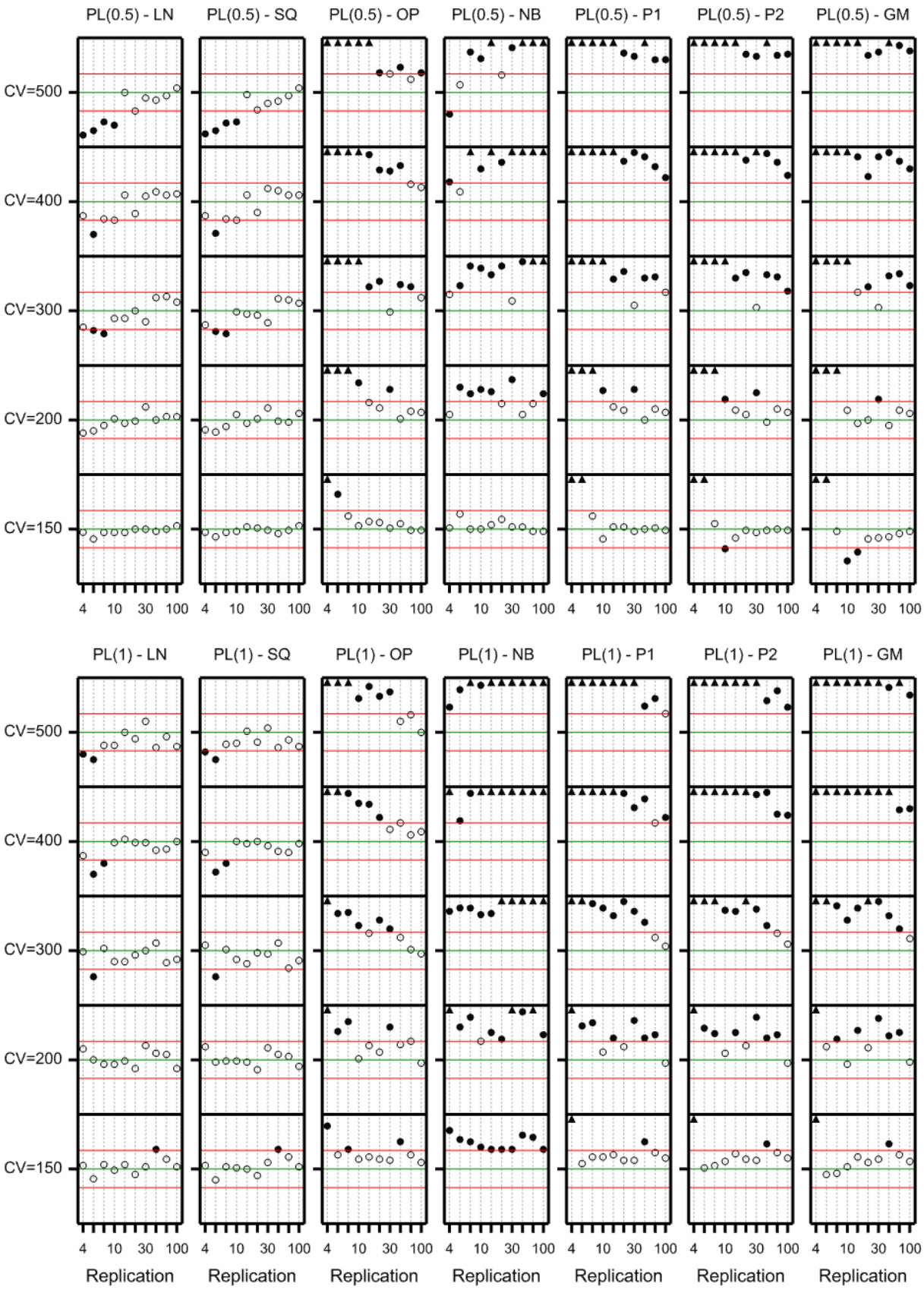
Appendix 1 F3: Size of difference test for Negative Binomial



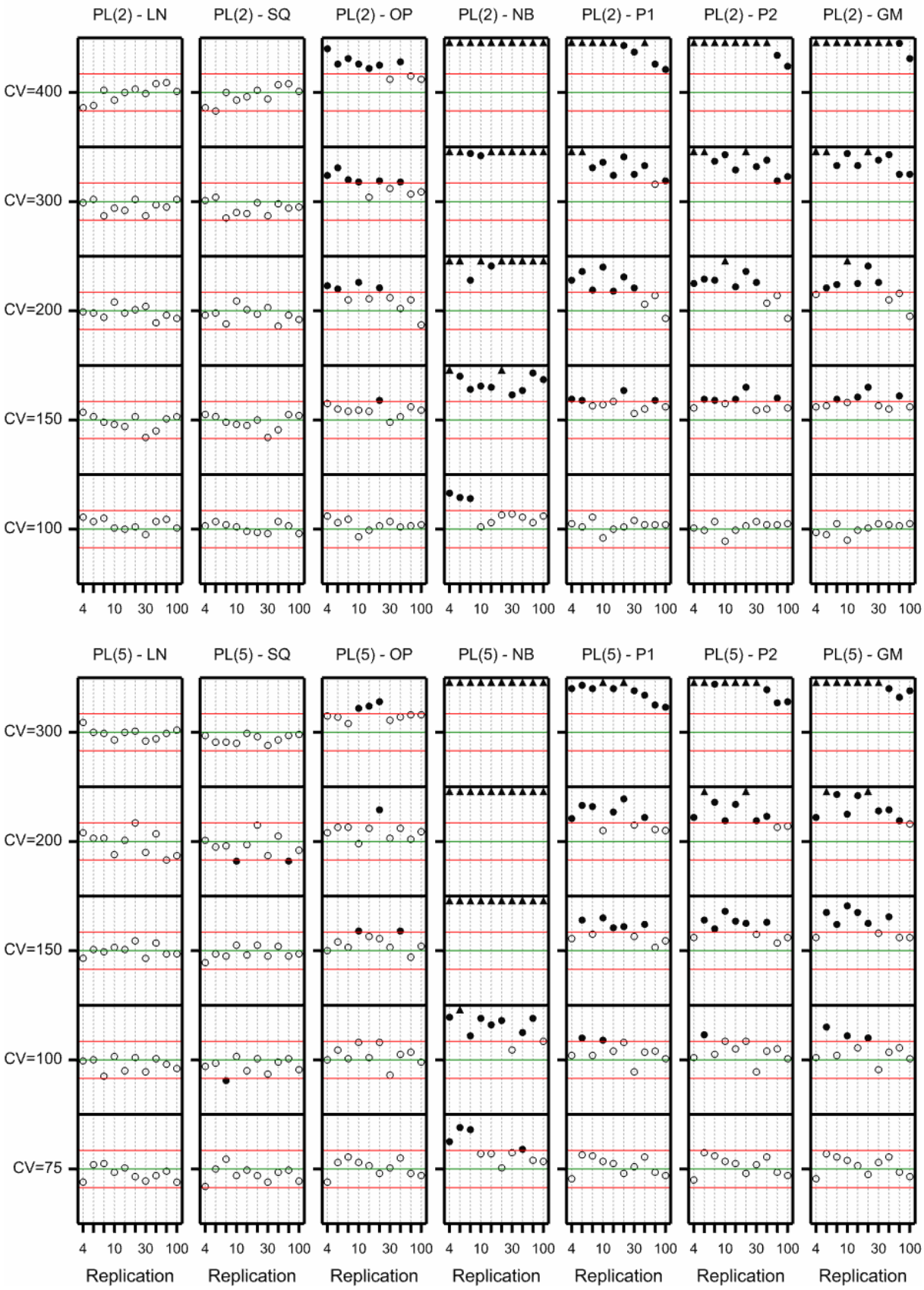
Appendix 1 F4: Size of difference test for Negative Binomial



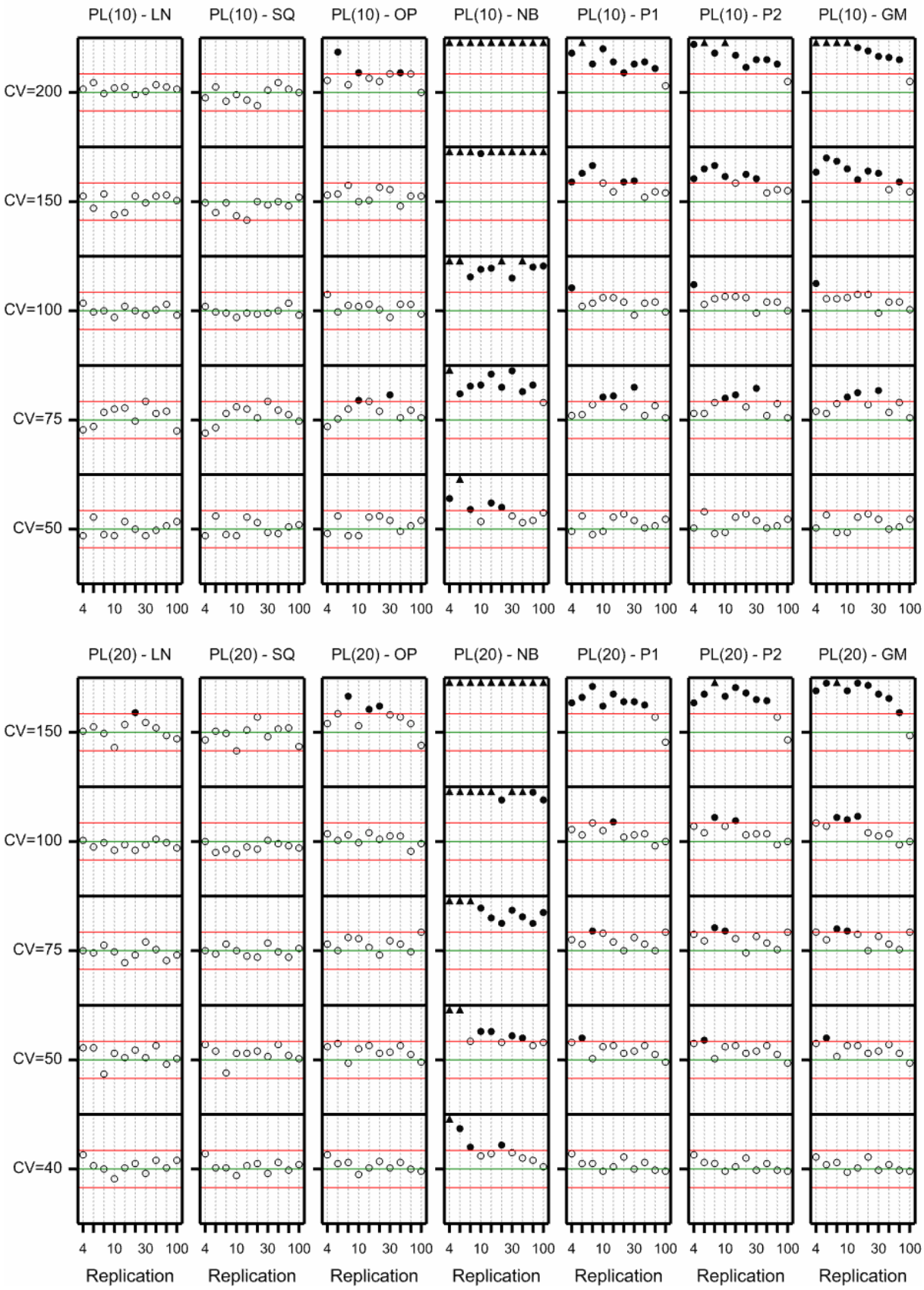
Appendix 1 G1: Size of difference test for Poisson-LogNormal



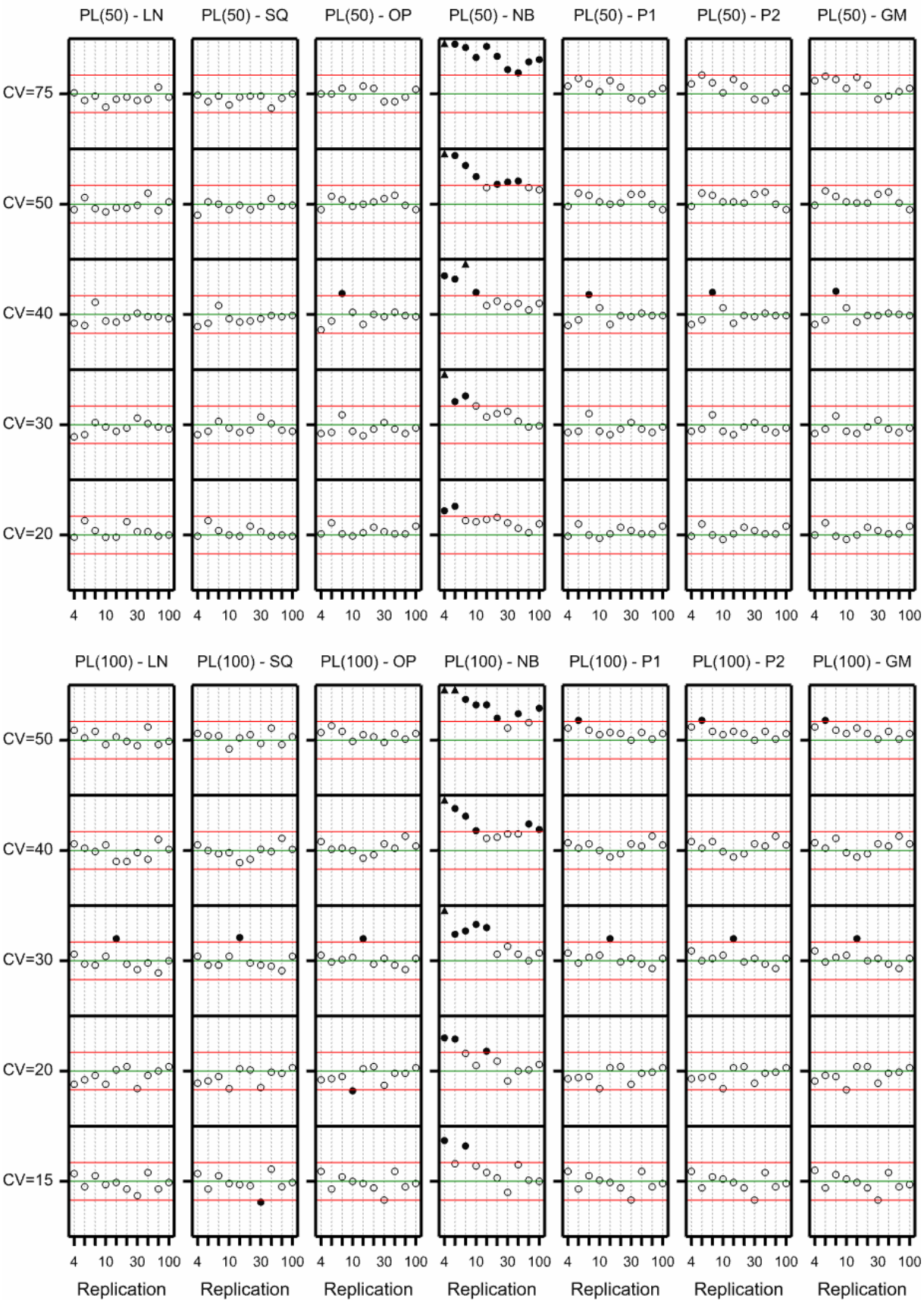
Appendix 1 G2: Size of difference test for Poisson-LogNormal



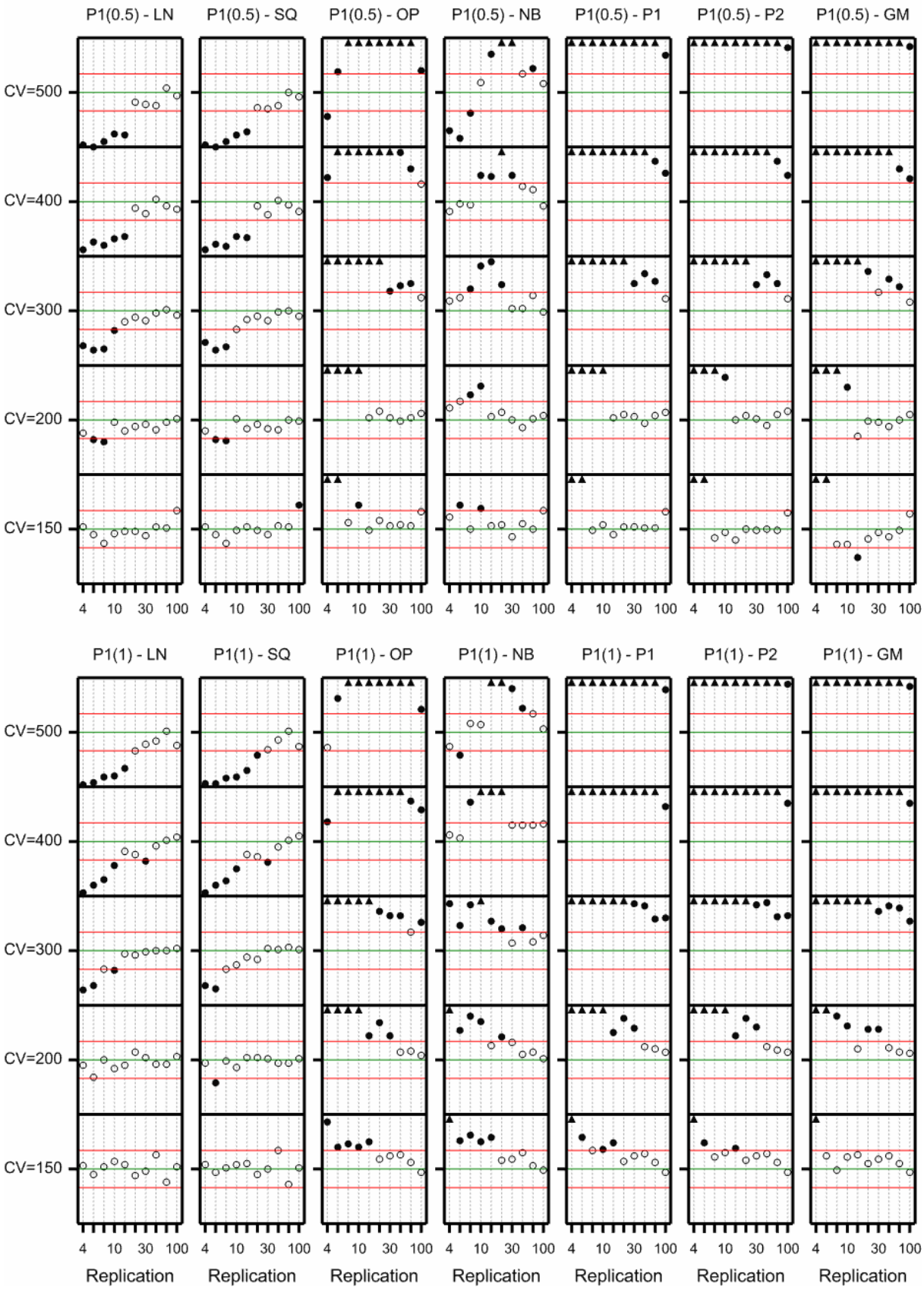
Appendix 1 G3: Size of difference test for Poisson-LogNormal



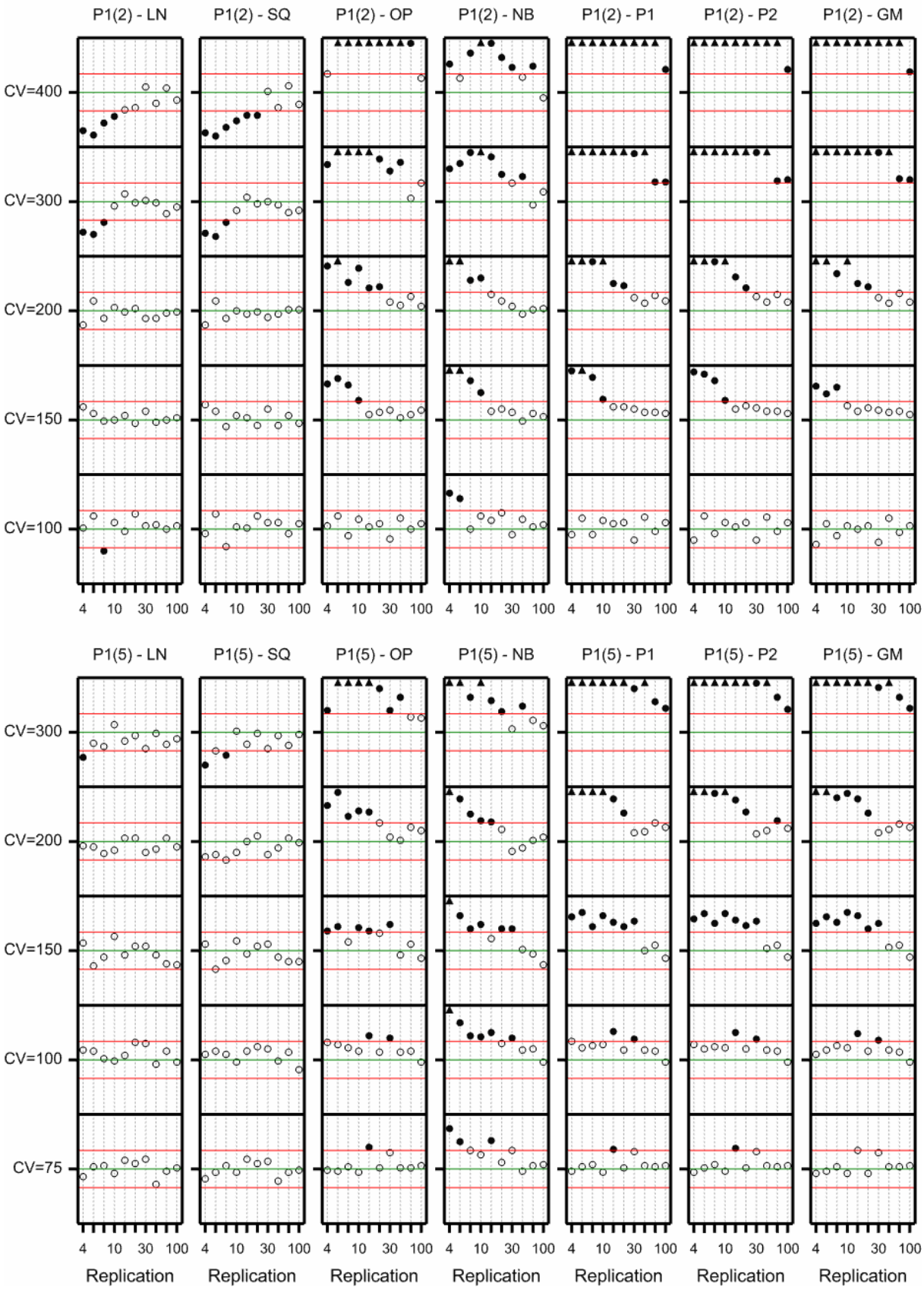
Appendix 1 G4: Size of difference test for Poisson-LogNormal



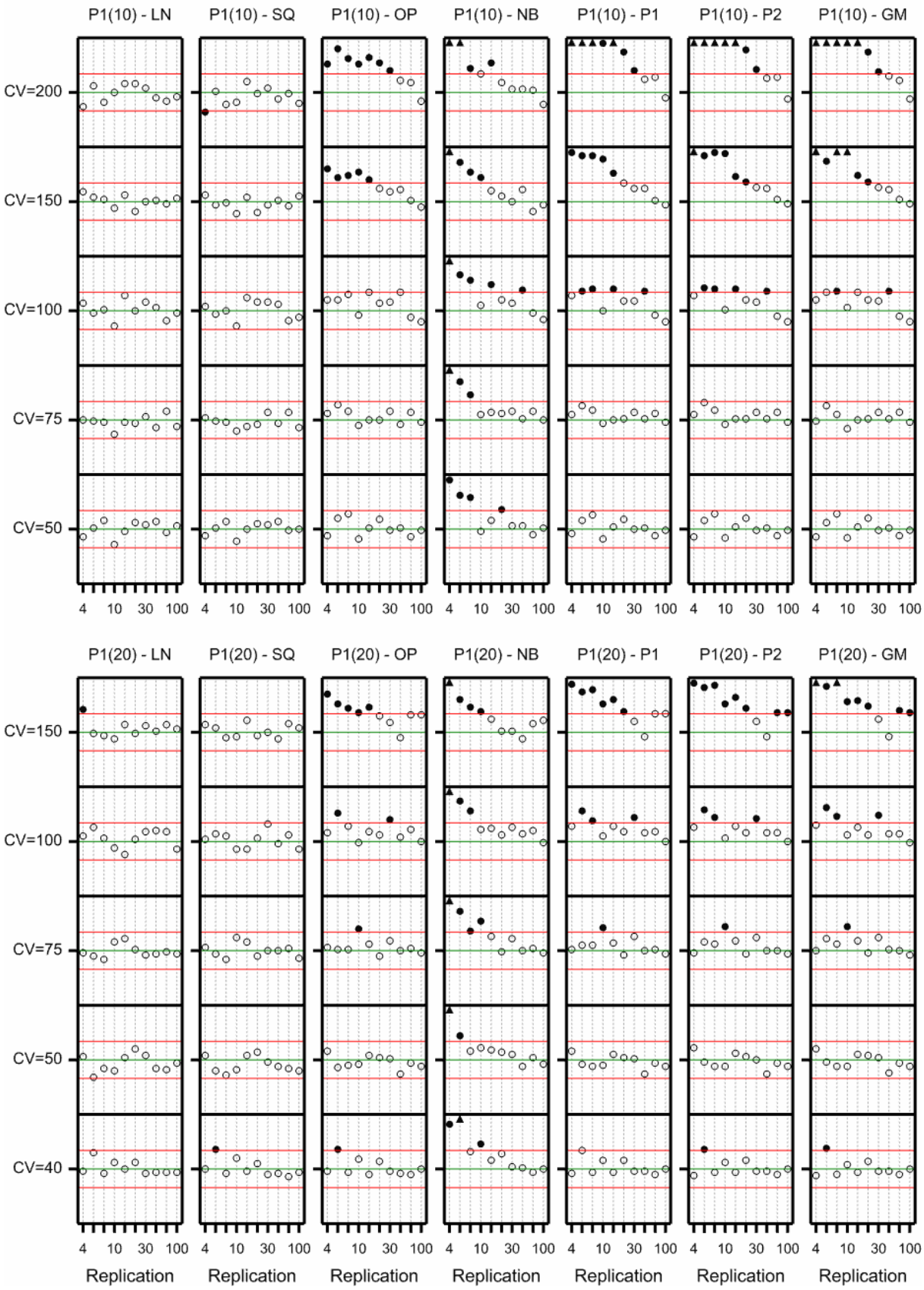
Appendix 1 H1: Size of difference test for Power(1.5)



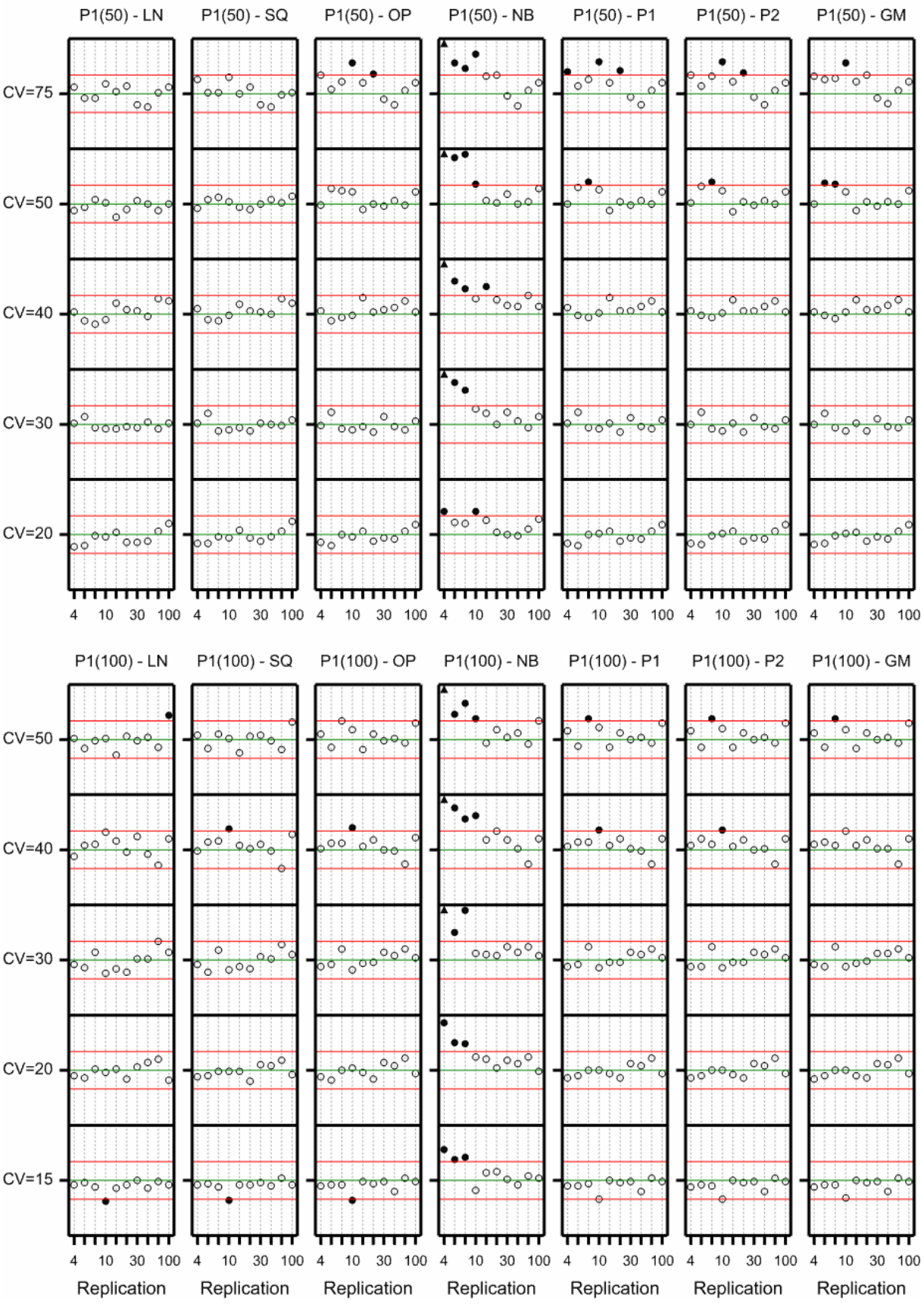
Appendix 1 H2: Size of difference test for Power(1.5)



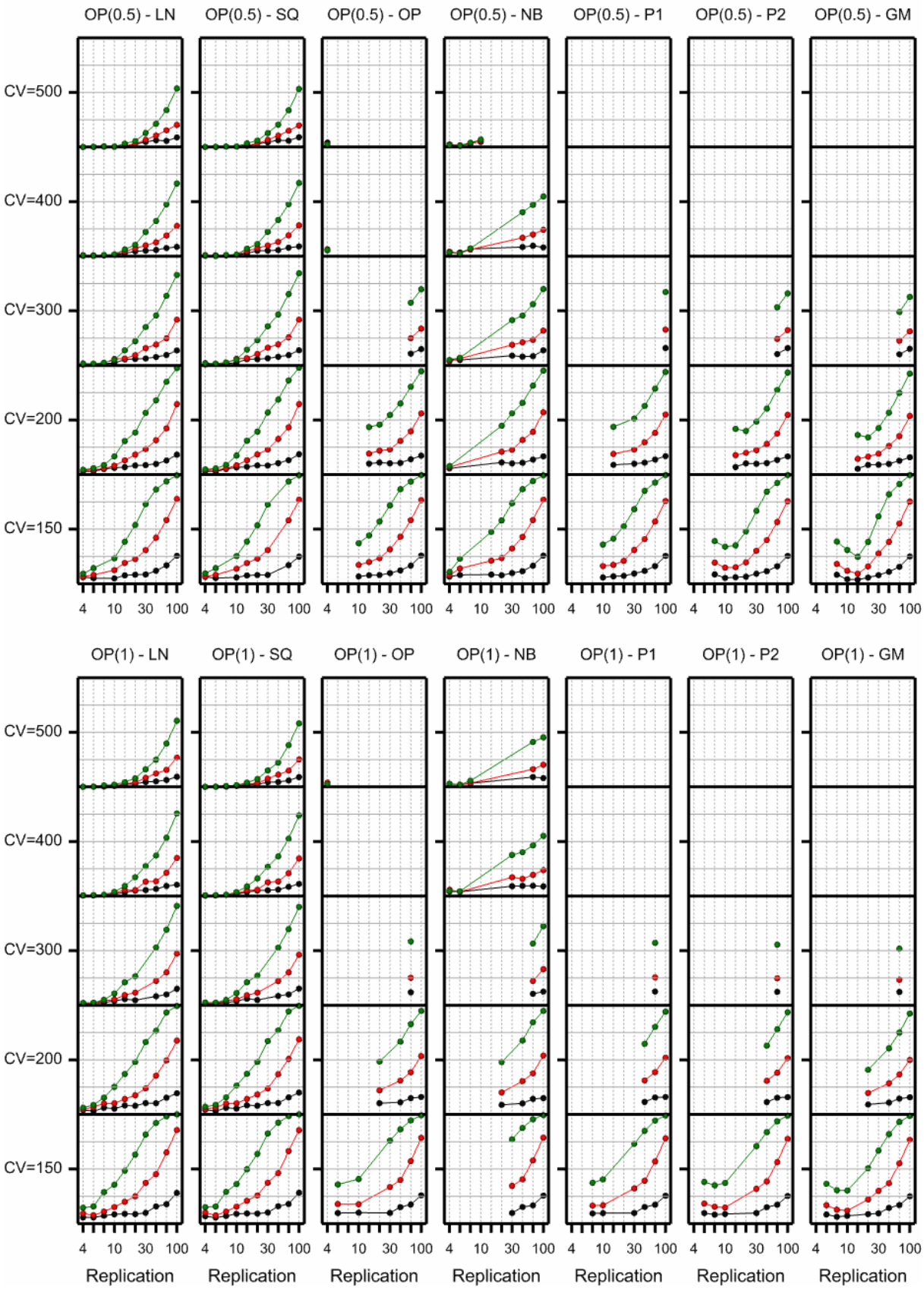
Appendix 1 H3: Size of difference test for Power(1.5)



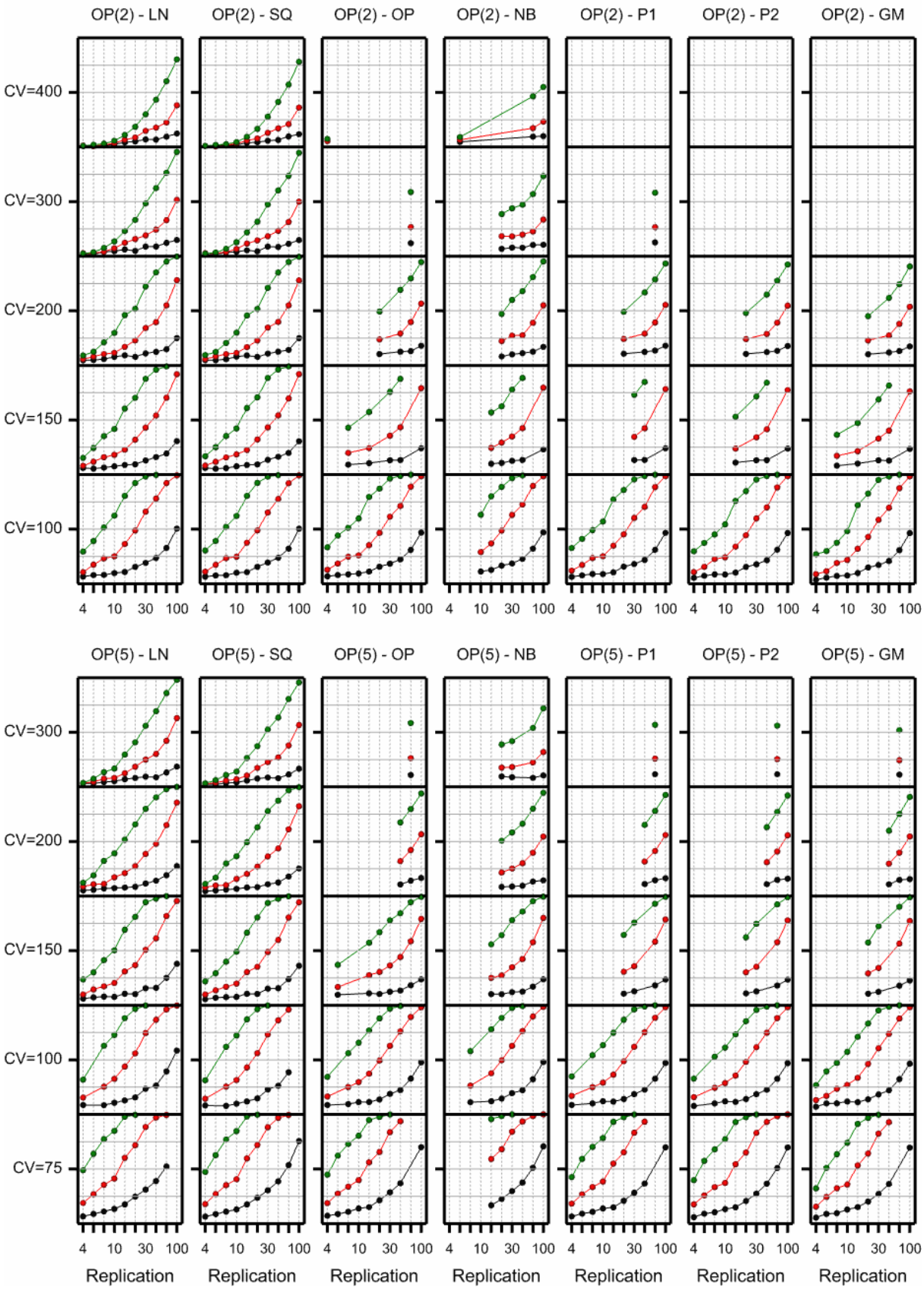
Appendix 1 H4: Size of difference test for Power(1.5)



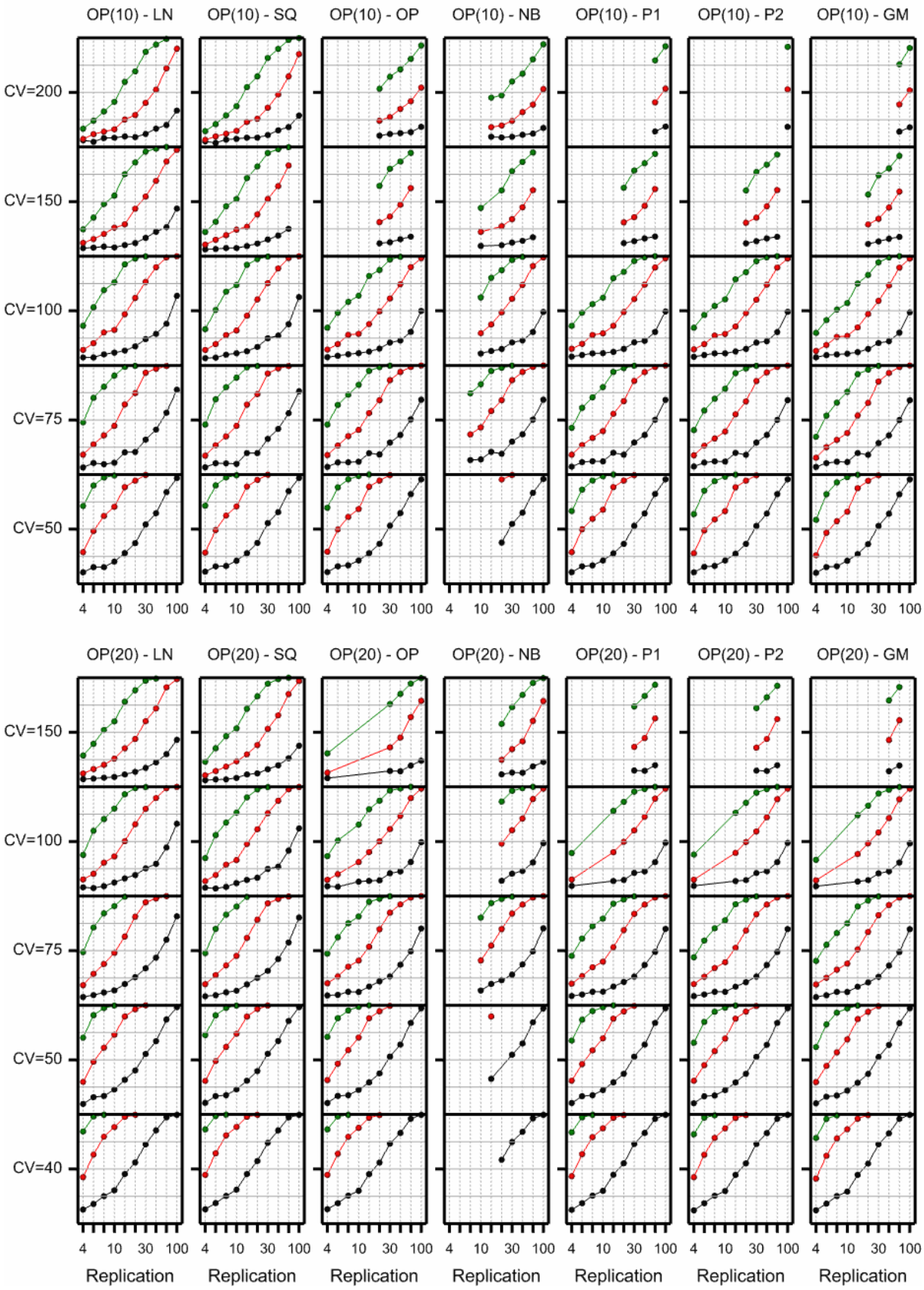
Appendix 1 I1: Power of difference test for Overdispersed Poisson



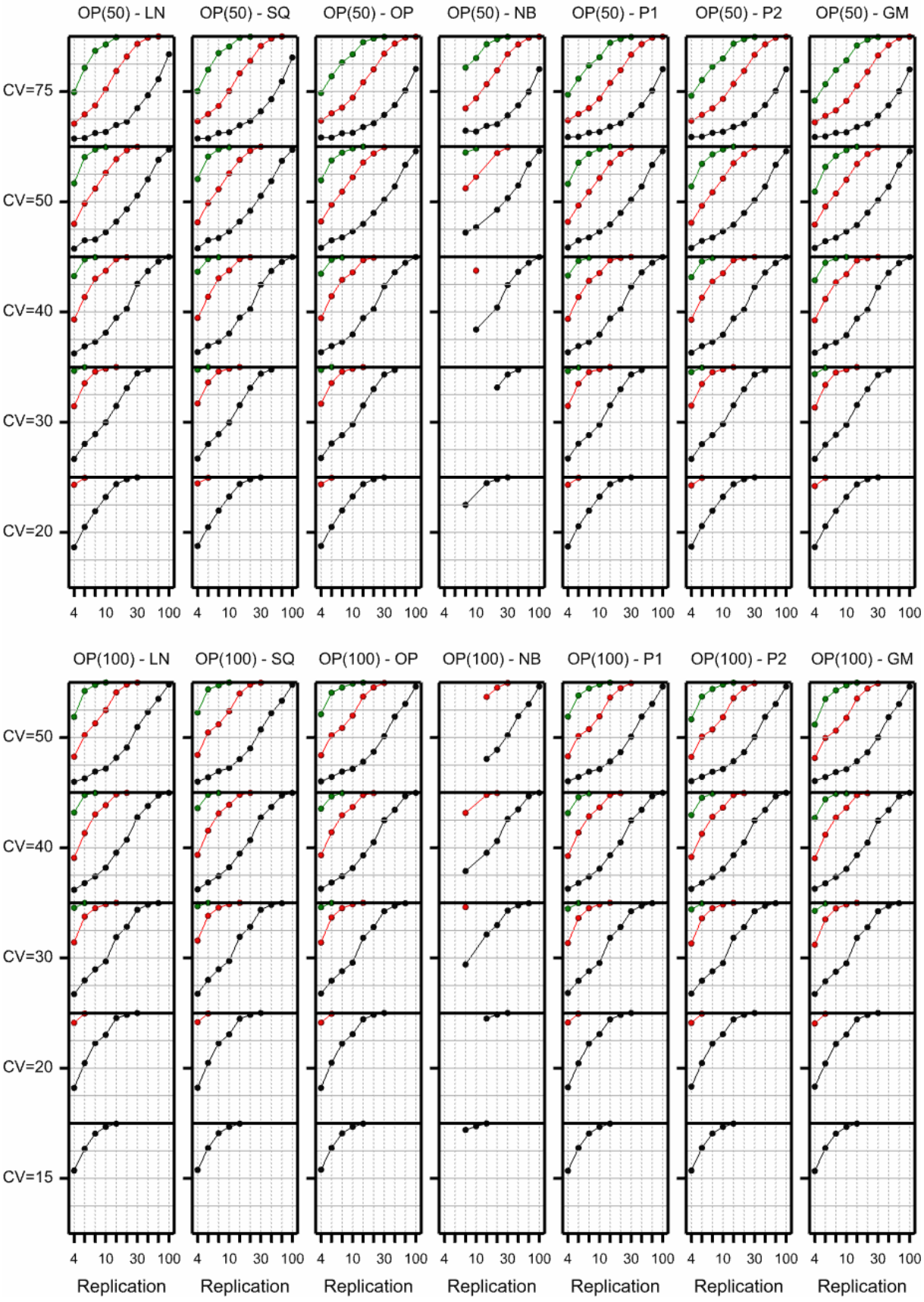
Appendix 1 I2: Power of difference test for Overdispersed Poisson



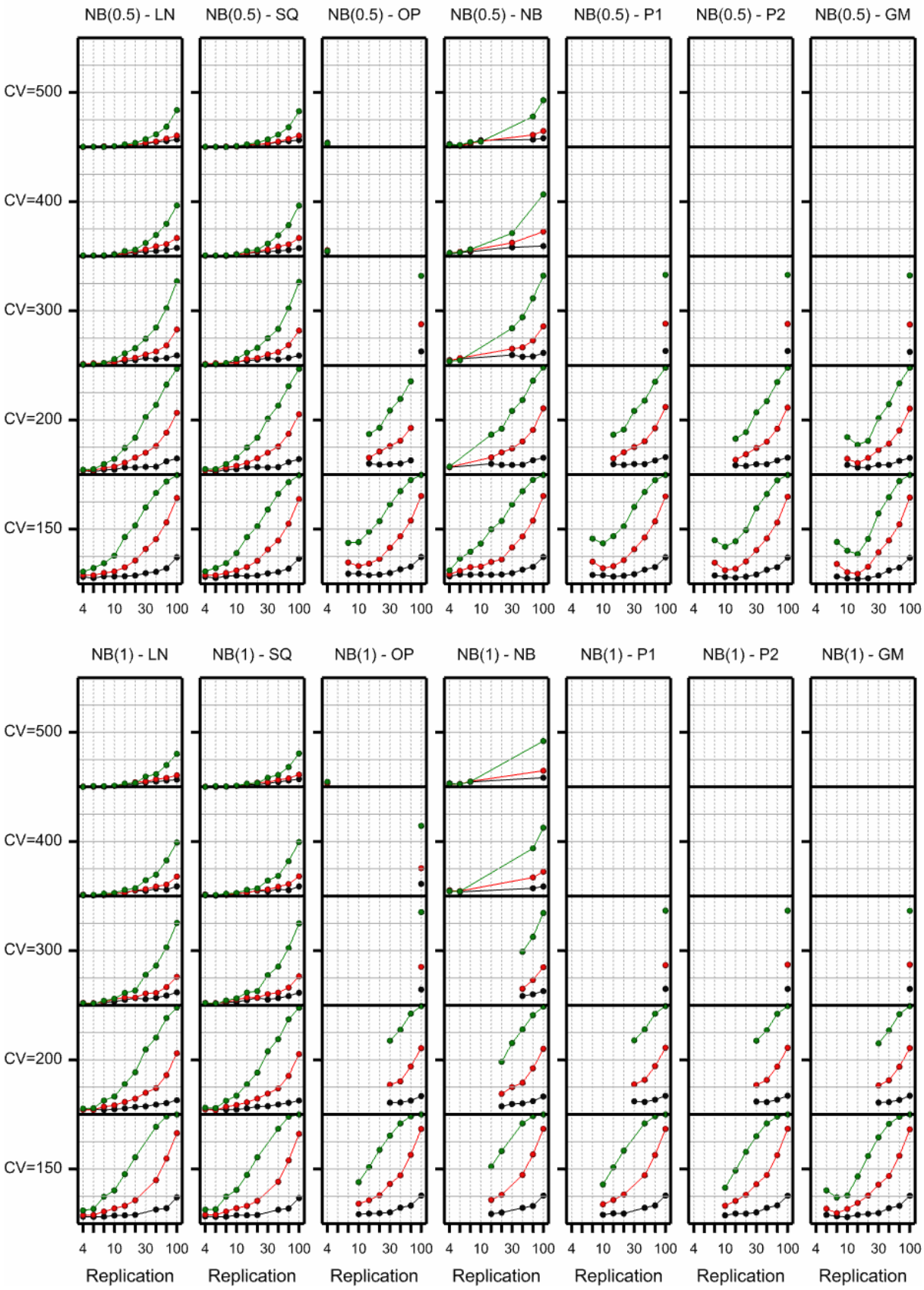
Appendix 1 I3: Power of difference test for Overdispersed Poisson



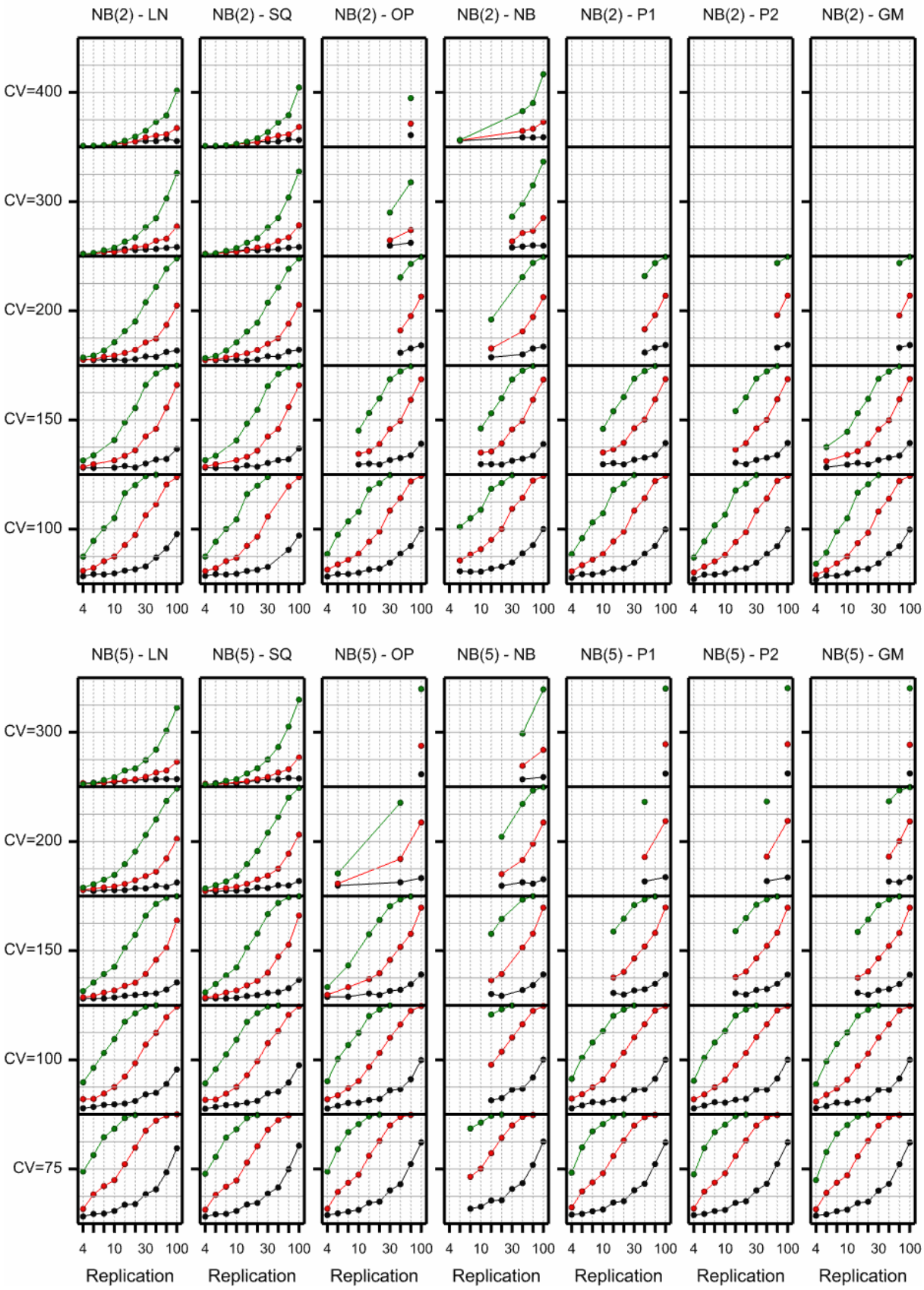
Appendix 1 I4: Power of difference test for Overdispersed Poisson



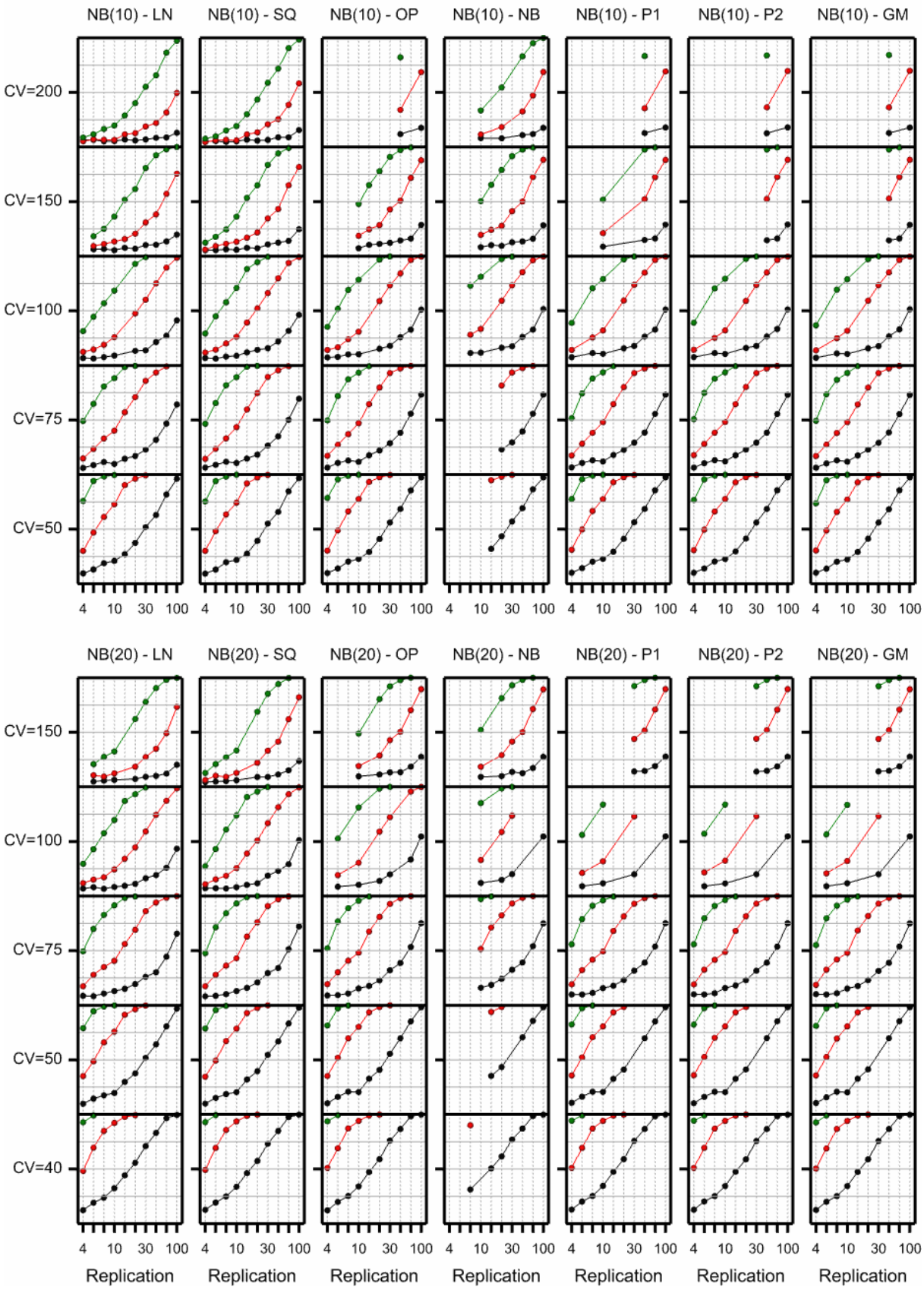
Appendix 1 J1: Power of difference test for Negative Binomial



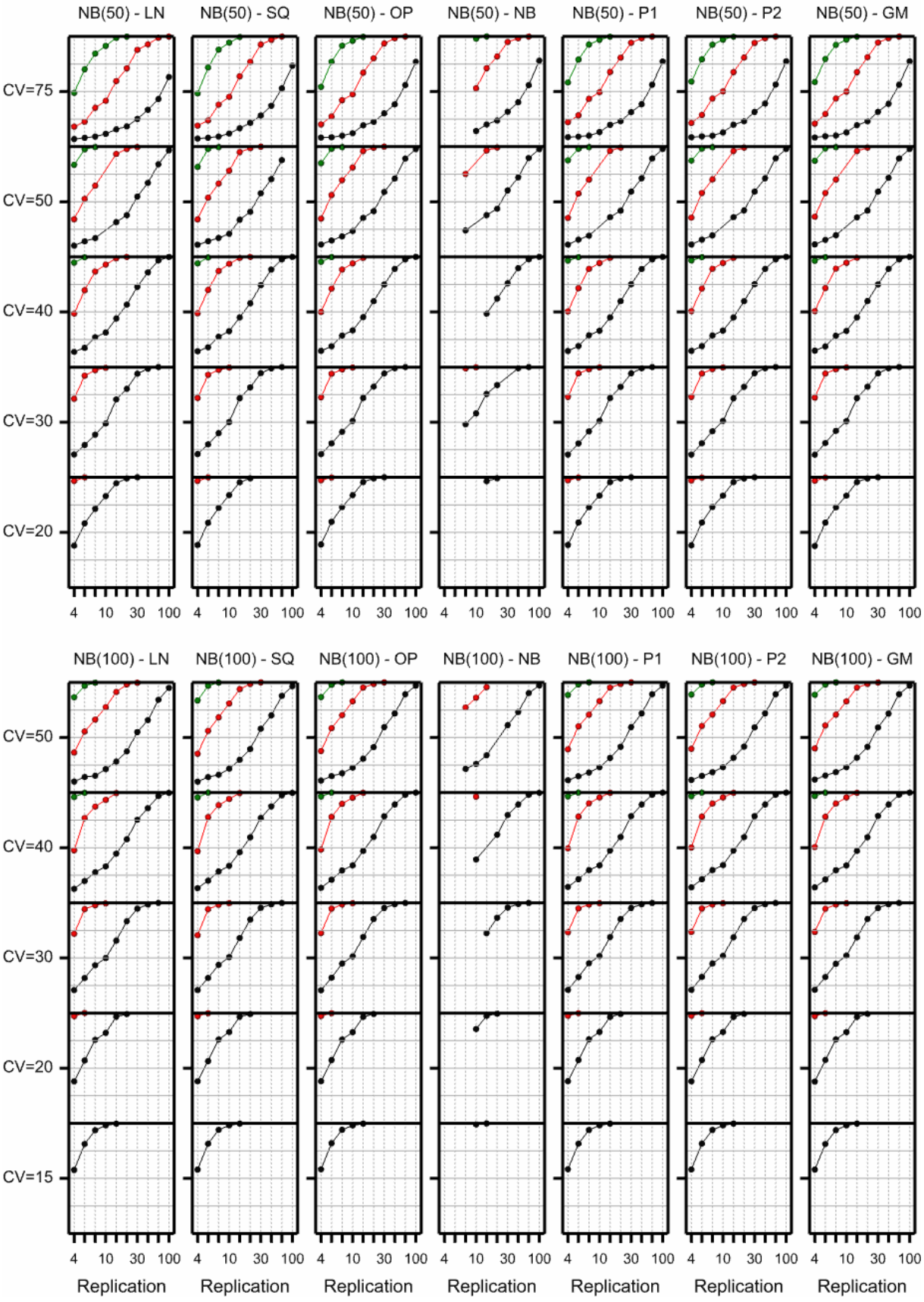
Appendix 1 J2: Power of difference test for Negative Binomial



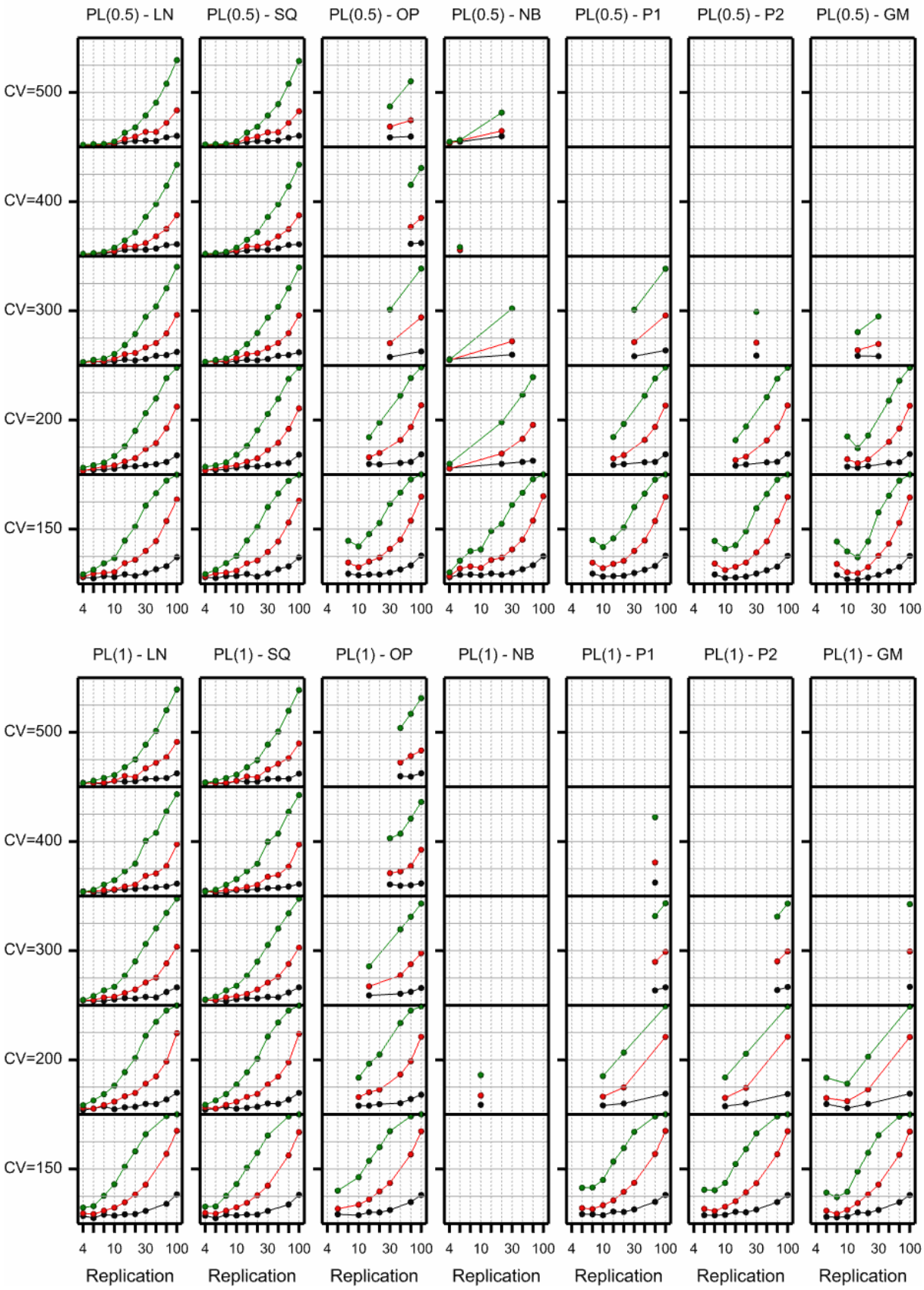
Appendix 1 J3: Power of difference test for Negative Binomial



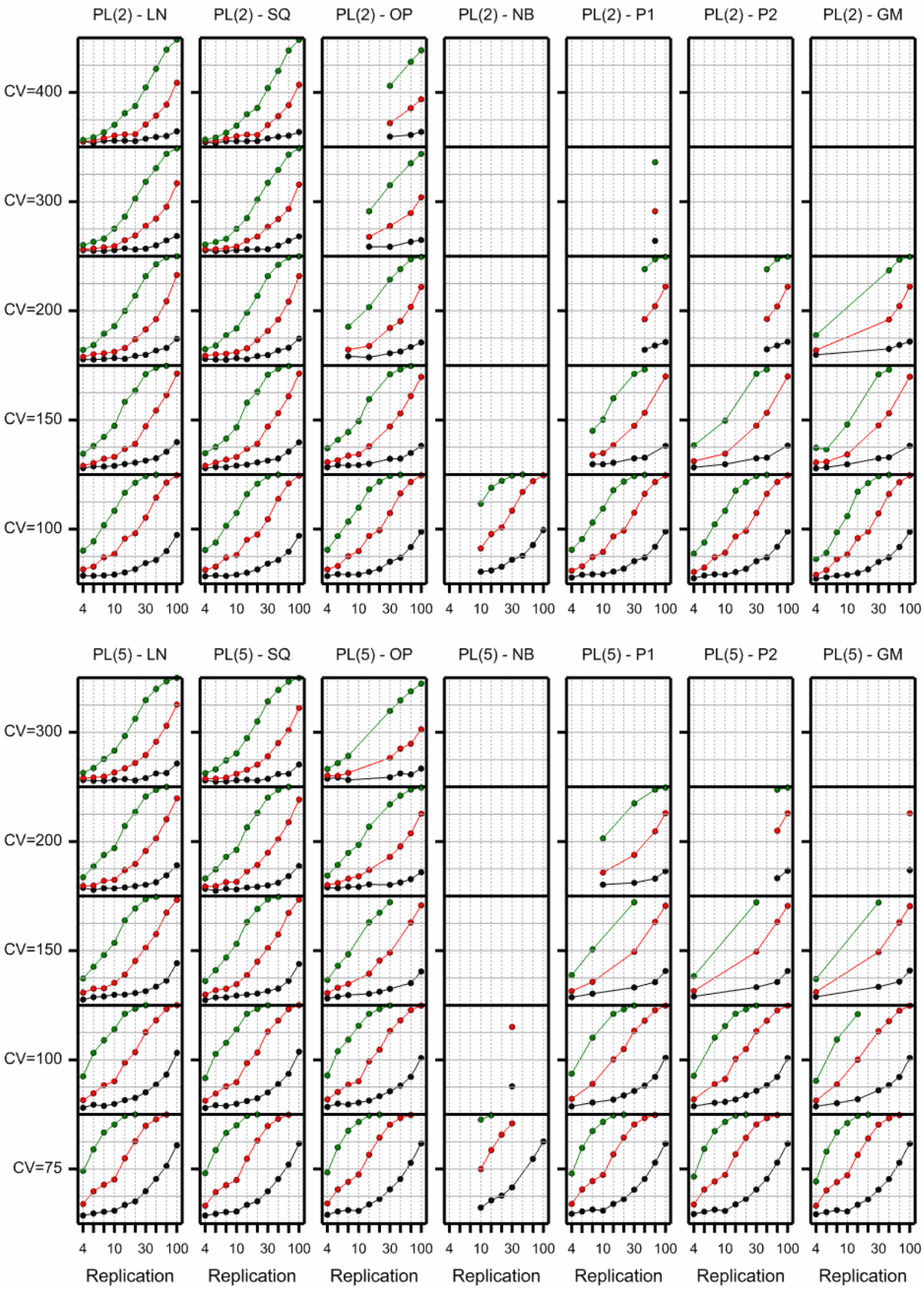
Appendix 1 J4: Power of difference test for Negative Binomial



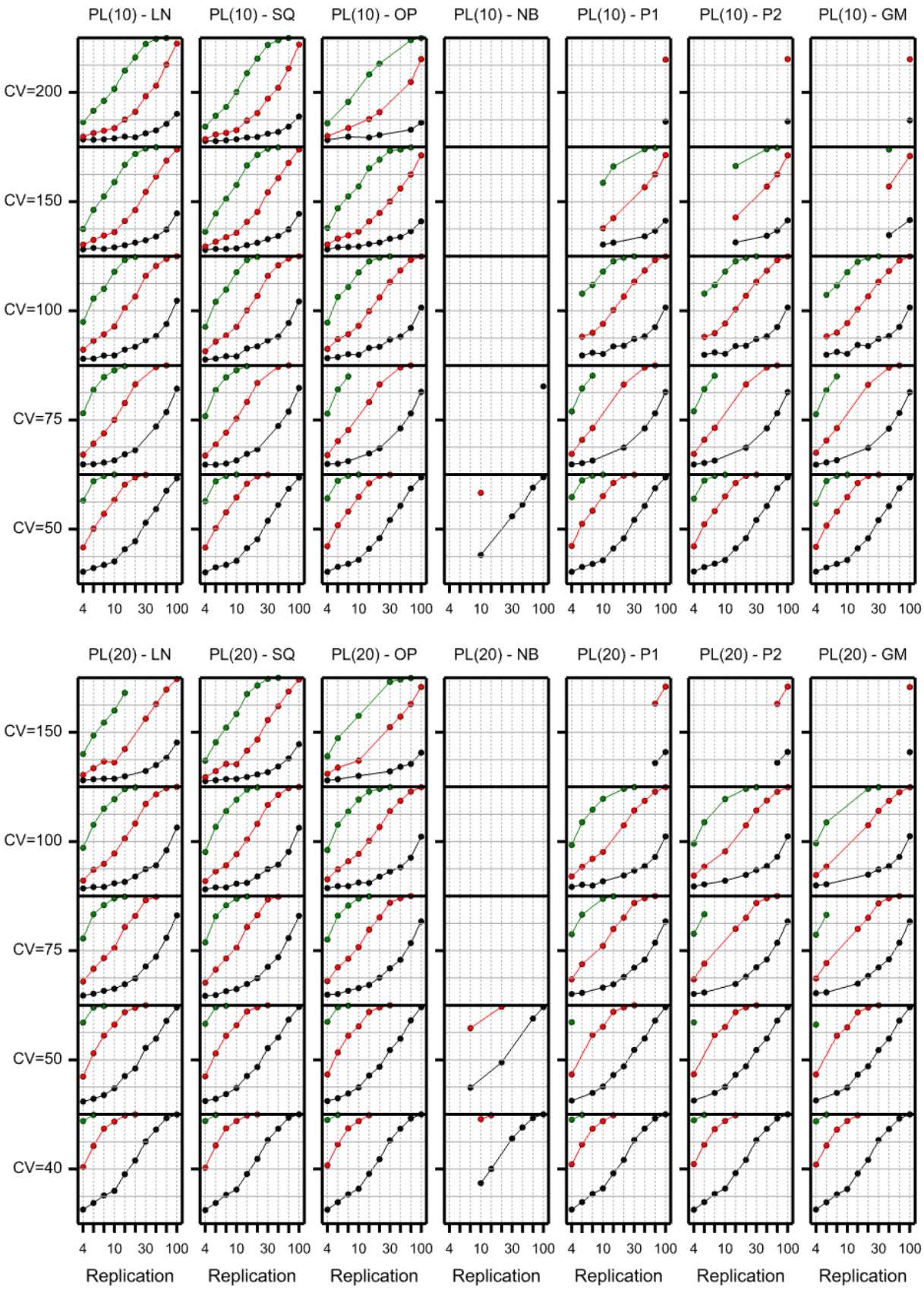
Appendix 1 K1: Power of difference test for Poisson-LogNormal



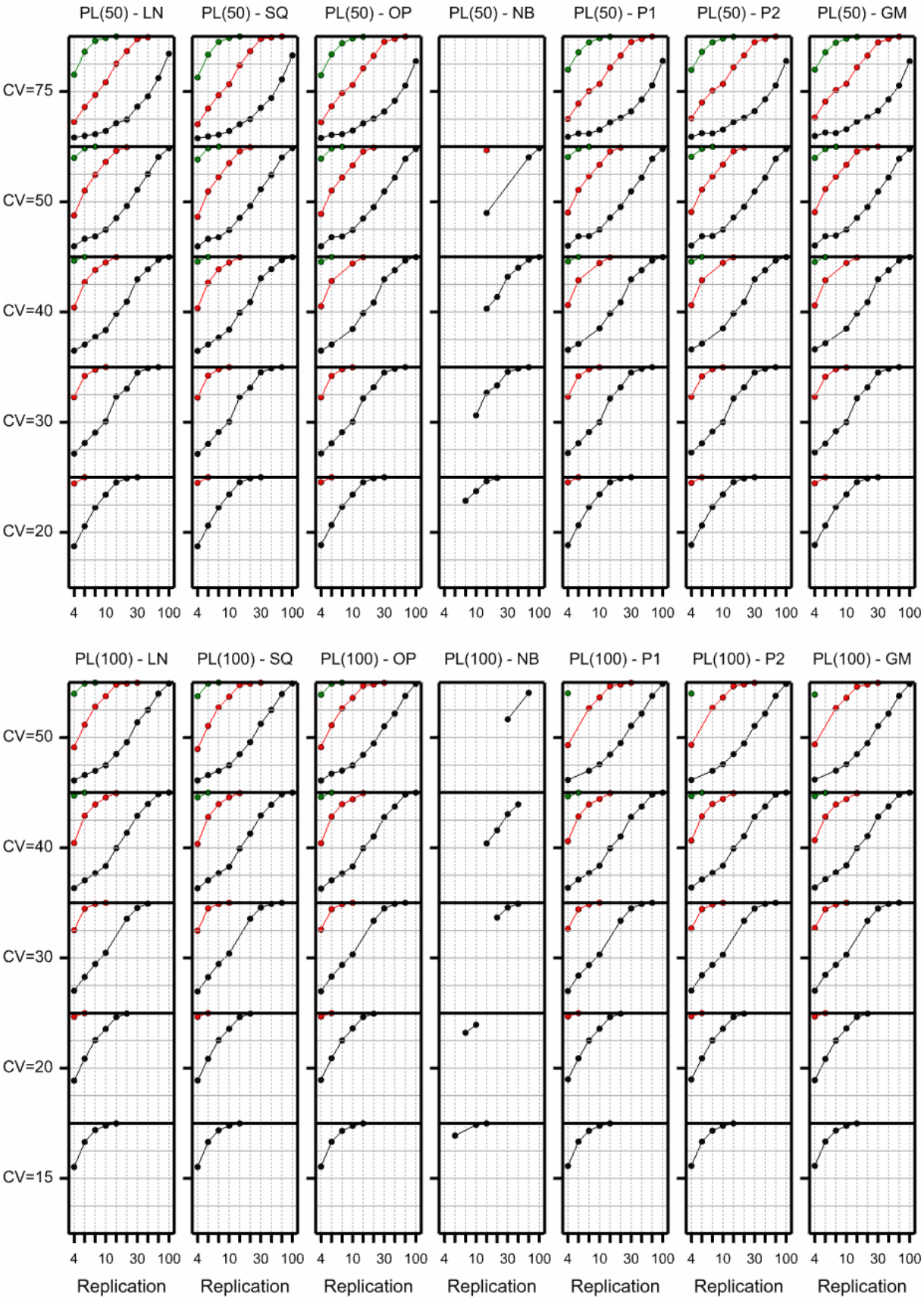
Appendix 1 K2: Power of difference test for Poisson-LogNormal



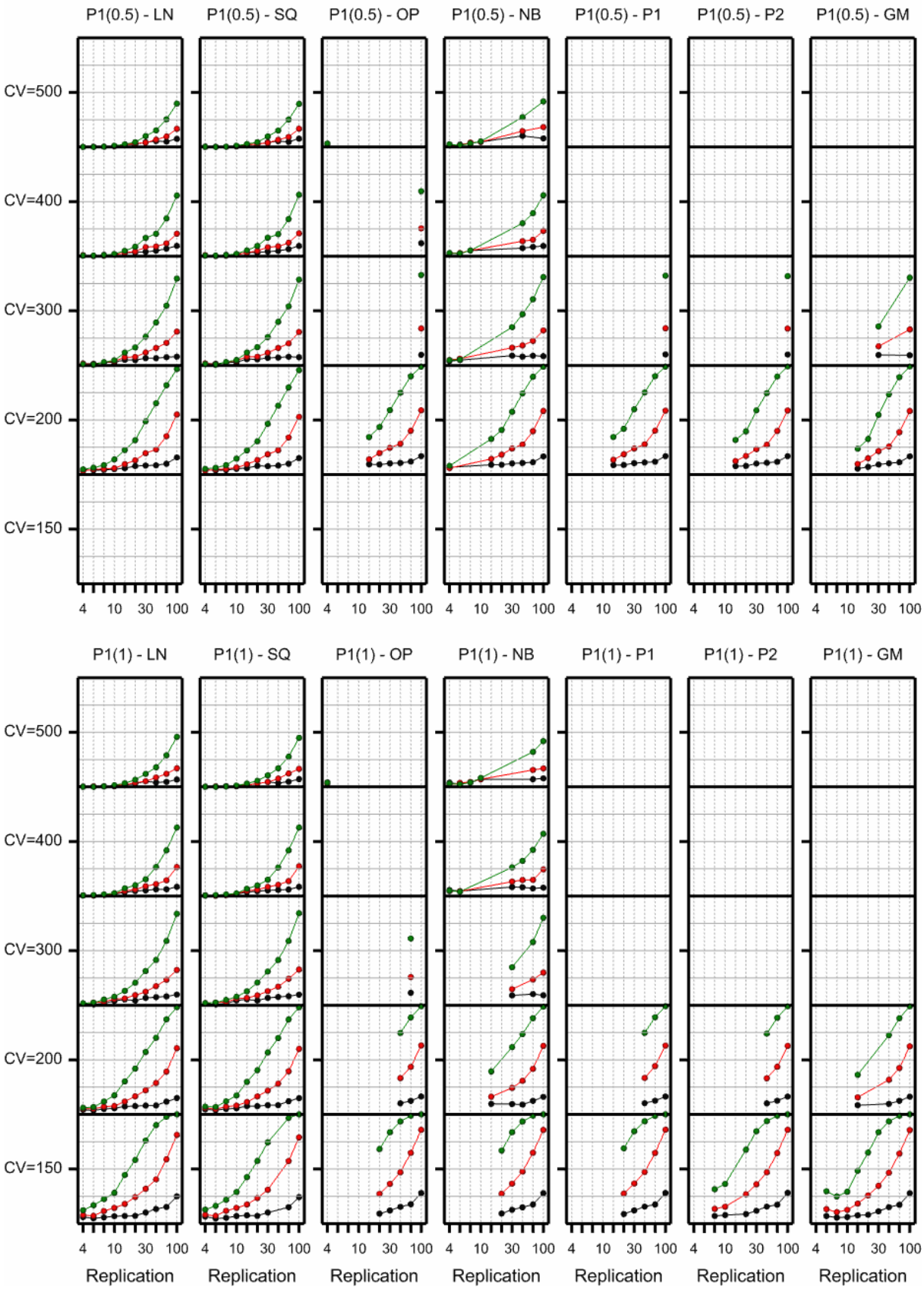
Appendix 1 K3: Power of difference test for Poisson-LogNormal



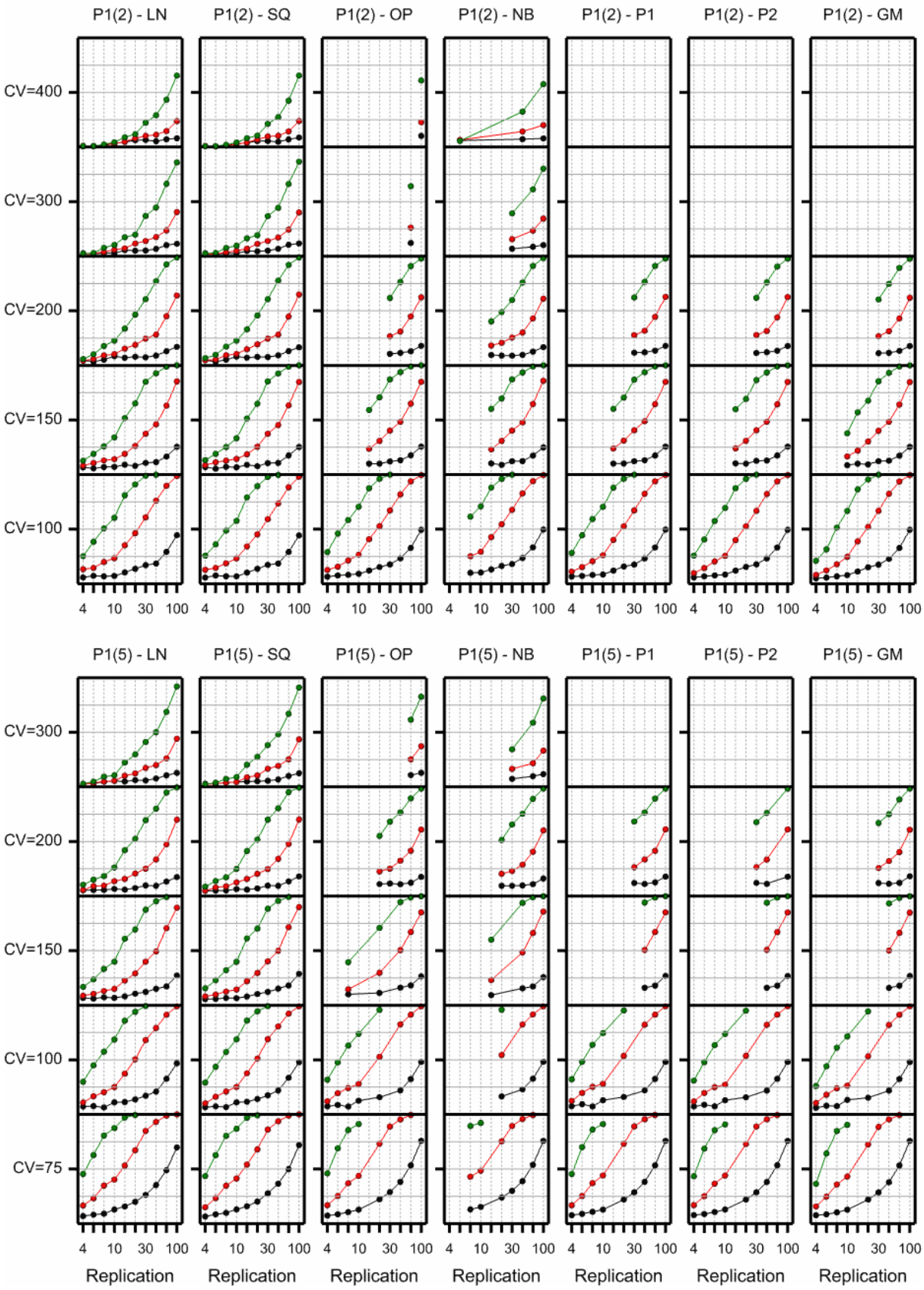
Appendix 1 K4: Power of difference test for Poisson-LogNormal



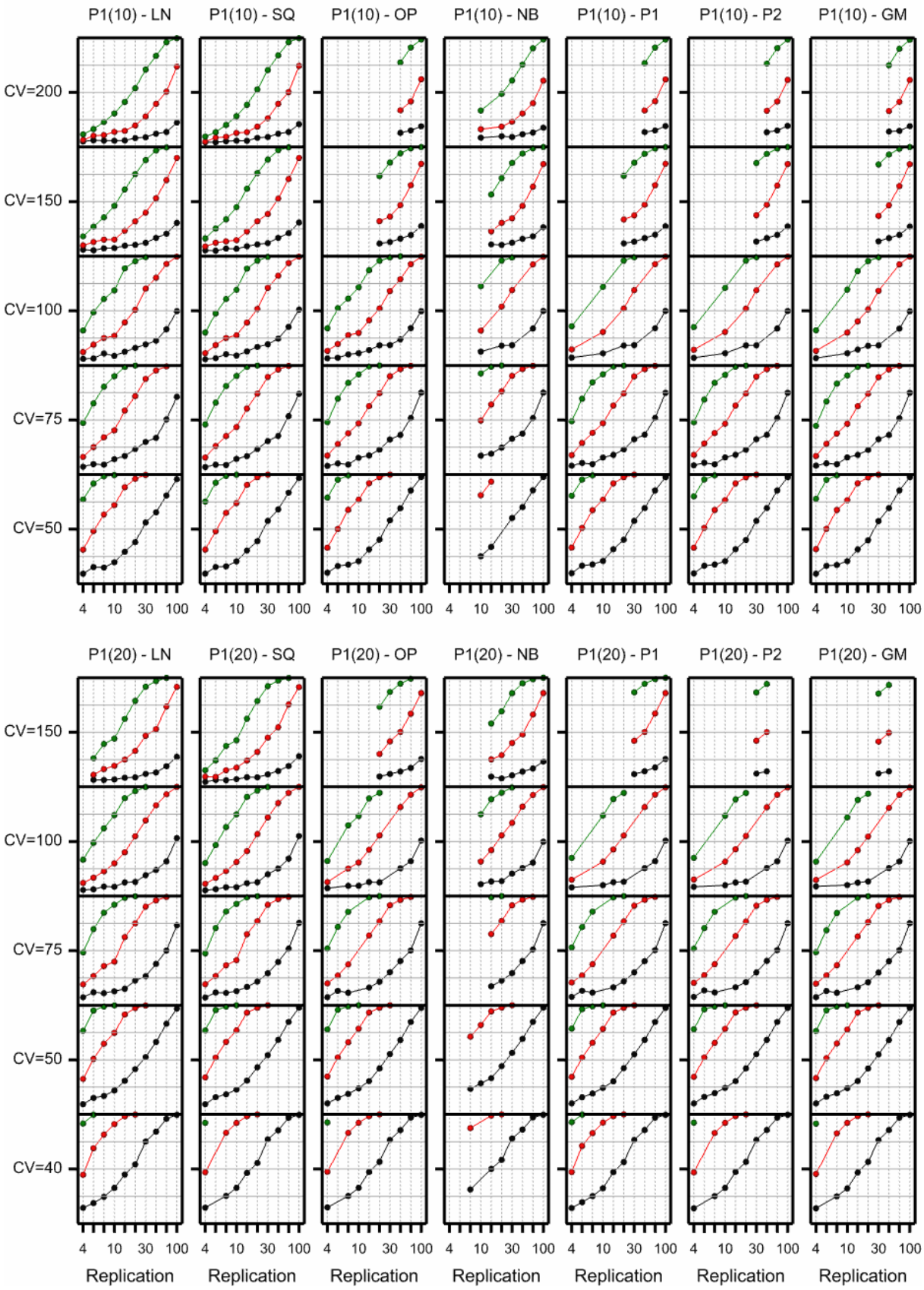
Appendix 1 L1: Power of difference test for Power(1.5)



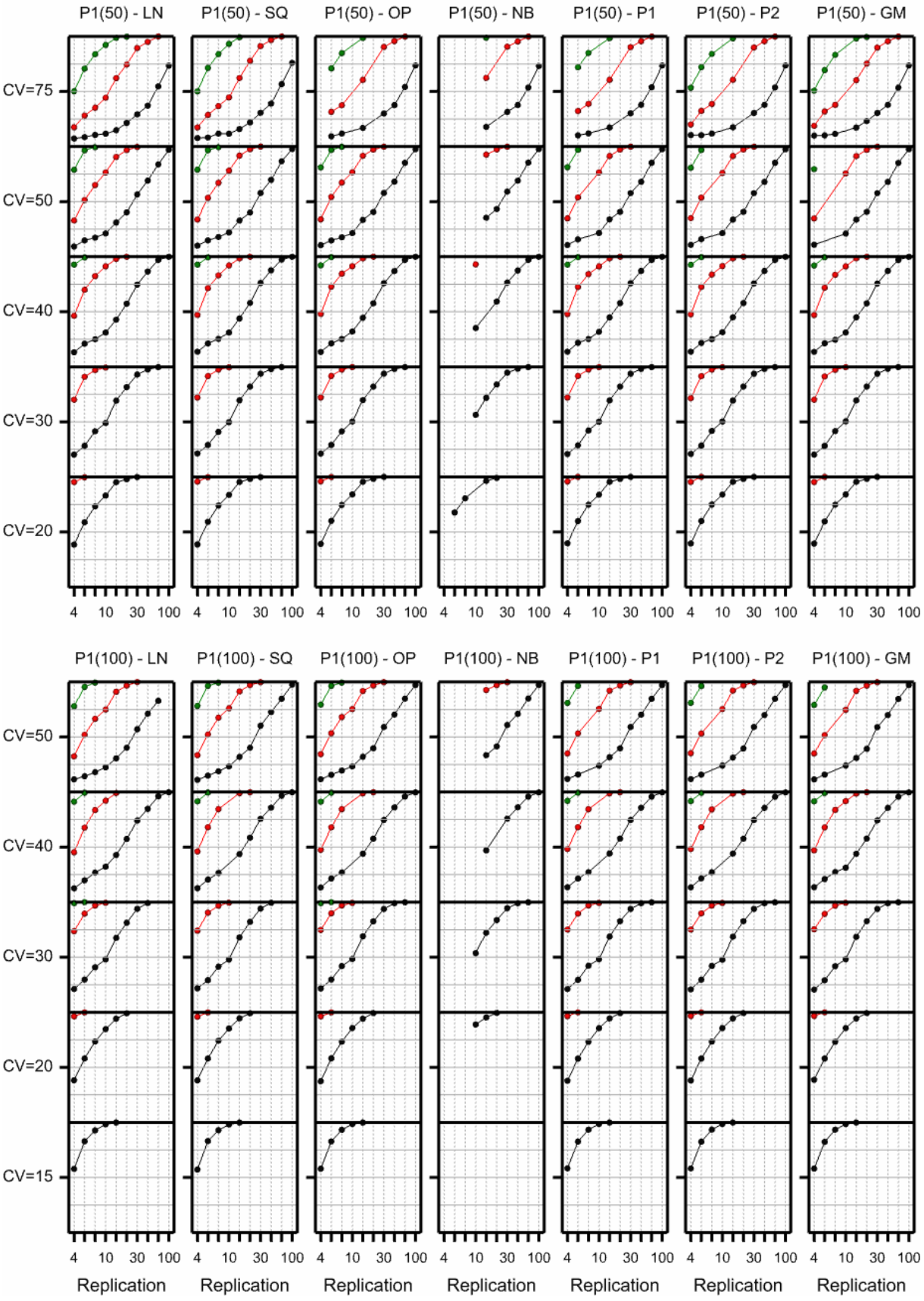
Appendix 1 L2: Power of difference test for Power(1.5)

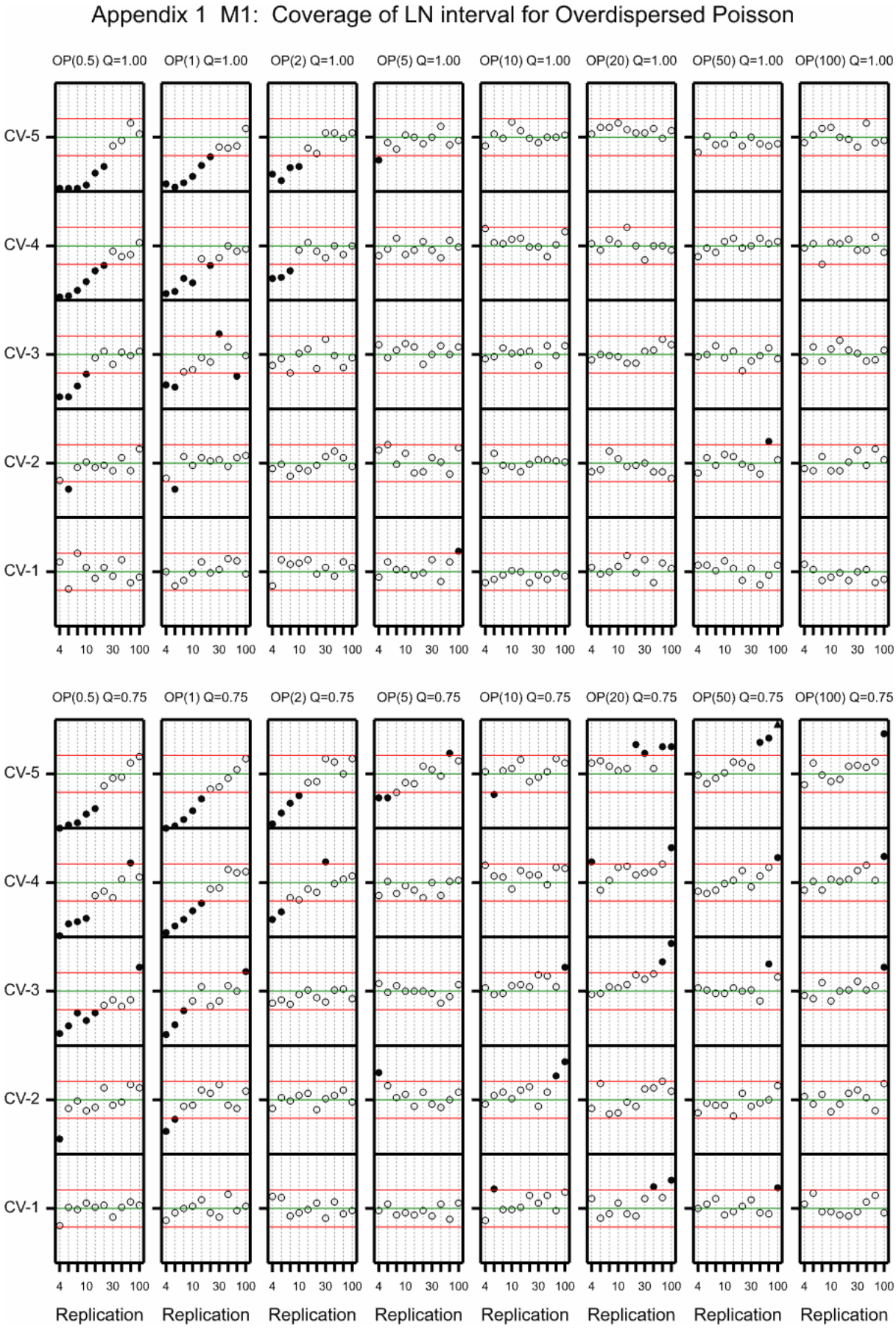


Appendix 1 L3: Power of difference test for Power(1.5)

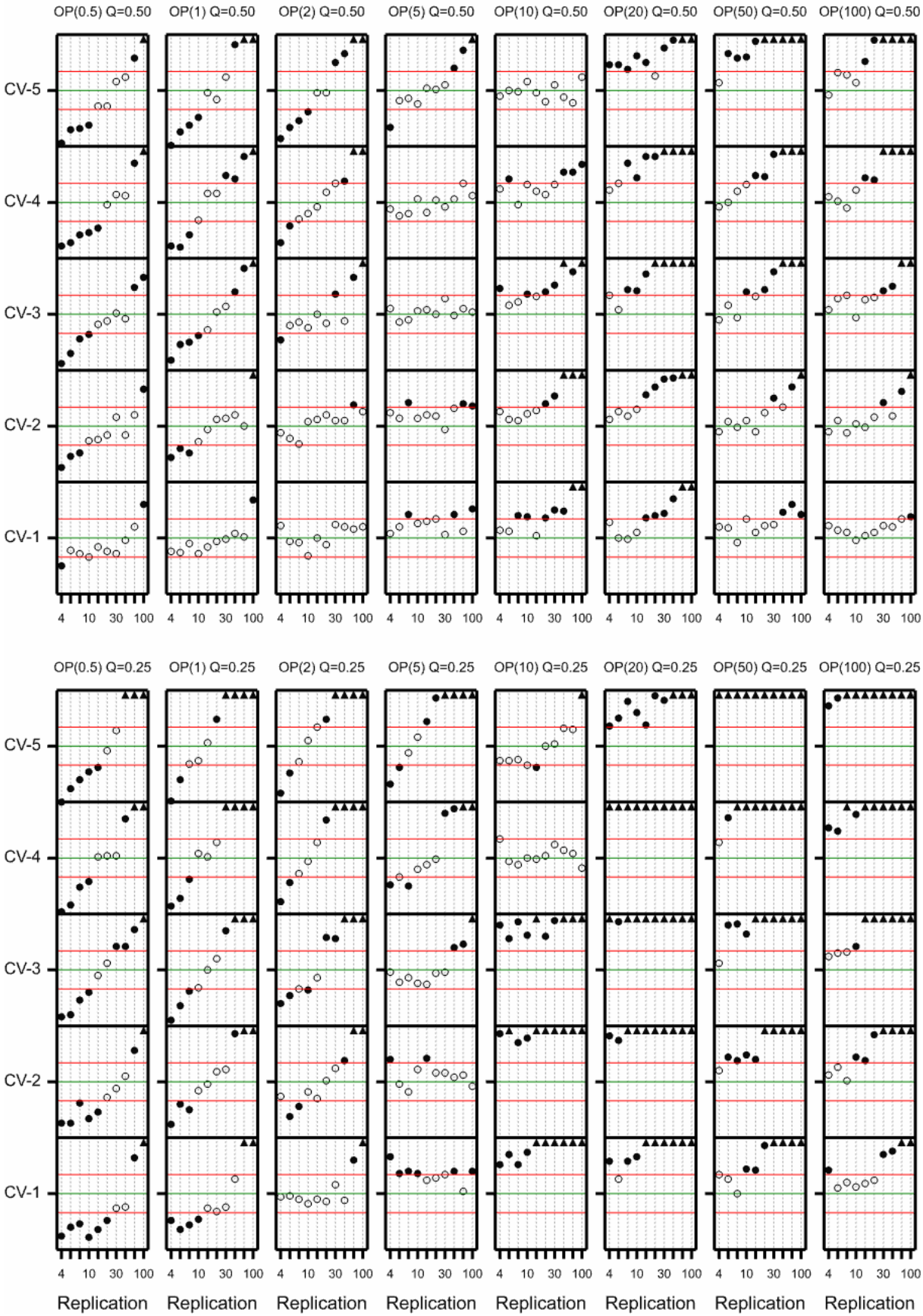


Appendix 1 L4: Power of difference test for Power(1.5)

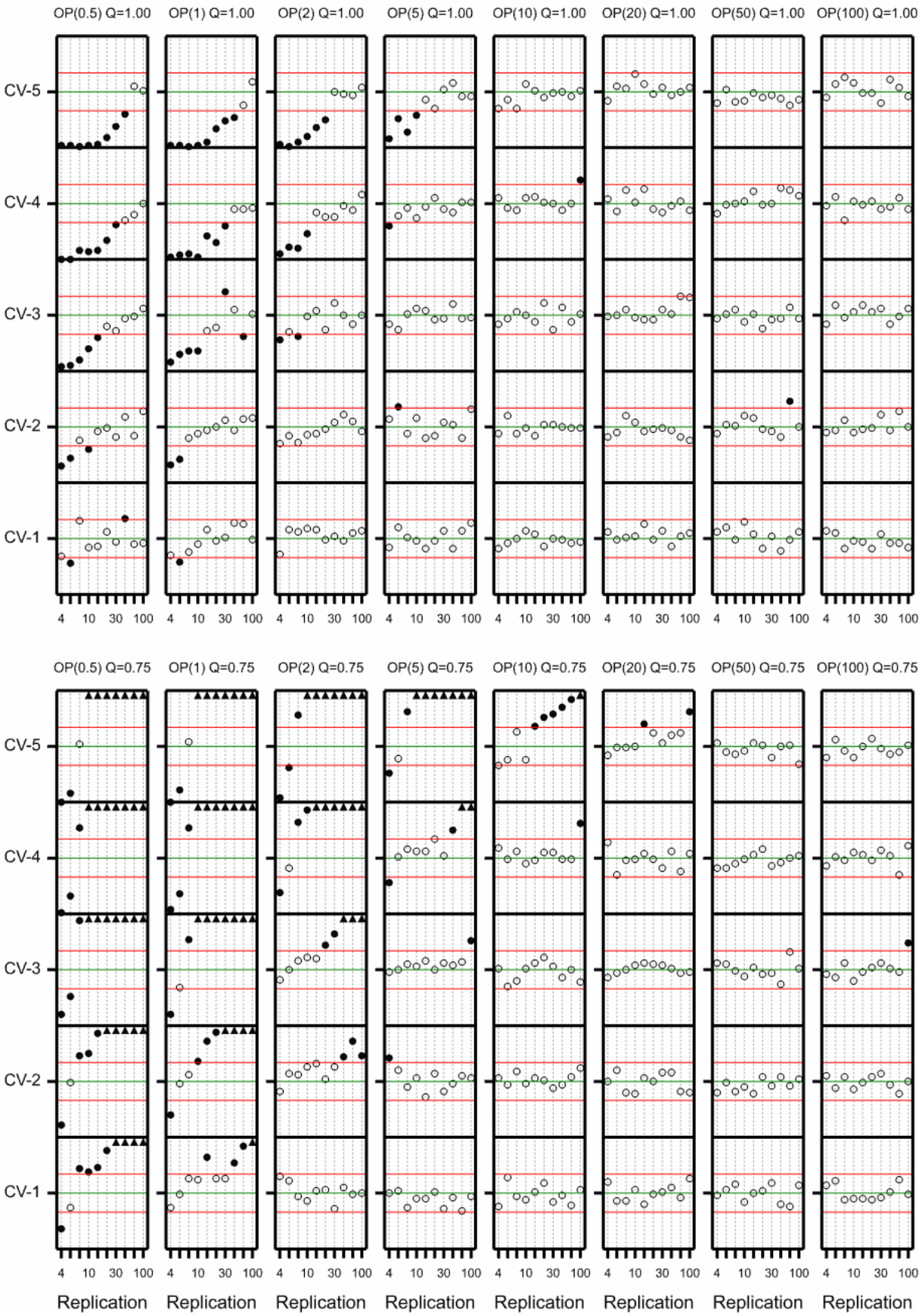



Appendix 1 M1: Coverage of LN interval for Overdispersed Poisson
OP(0.5) Q=1.00
OP(1) Q=1.00
OP(2) Q=1.00
OP(5) Q=1.00
OP(10) Q=1.00
OP(20) Q=1.00
OP(50) Q=1.00
OP(100) Q=1.00
CV-5
CV-4
CV-3
CV-2
CV-1
4 10 30 100
OP(0.5) Q=0.75
OP(1) Q=0.75
OP(2) Q=0.75
OP(5) Q=0.75
OP(10) Q=0.75
OP(20) Q=0.75
OP(50) Q=0.75
OP(100) Q=0.75
Replication

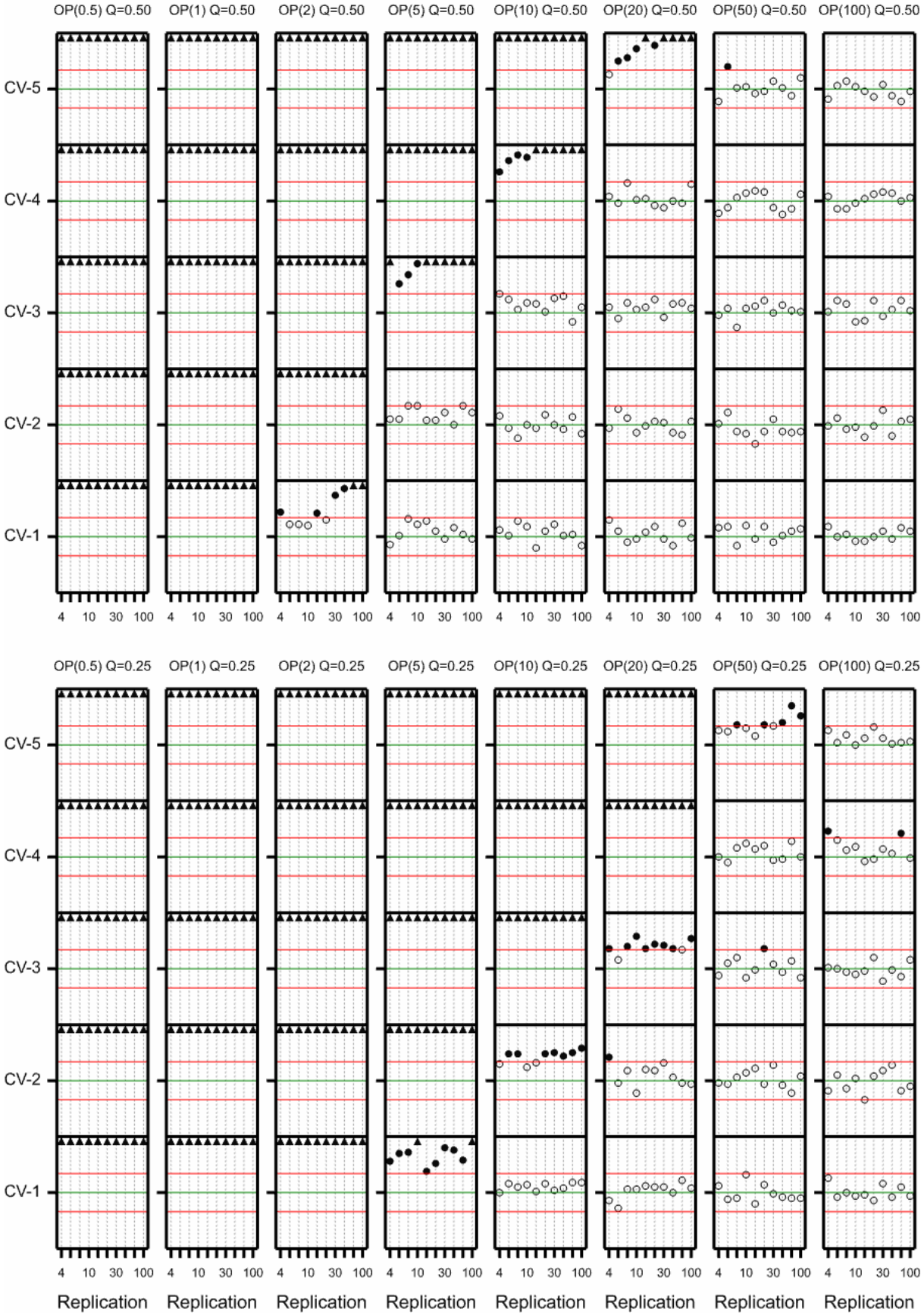
Appendix 1 M2: Coverage of LN interval for Overdispersed Poisson



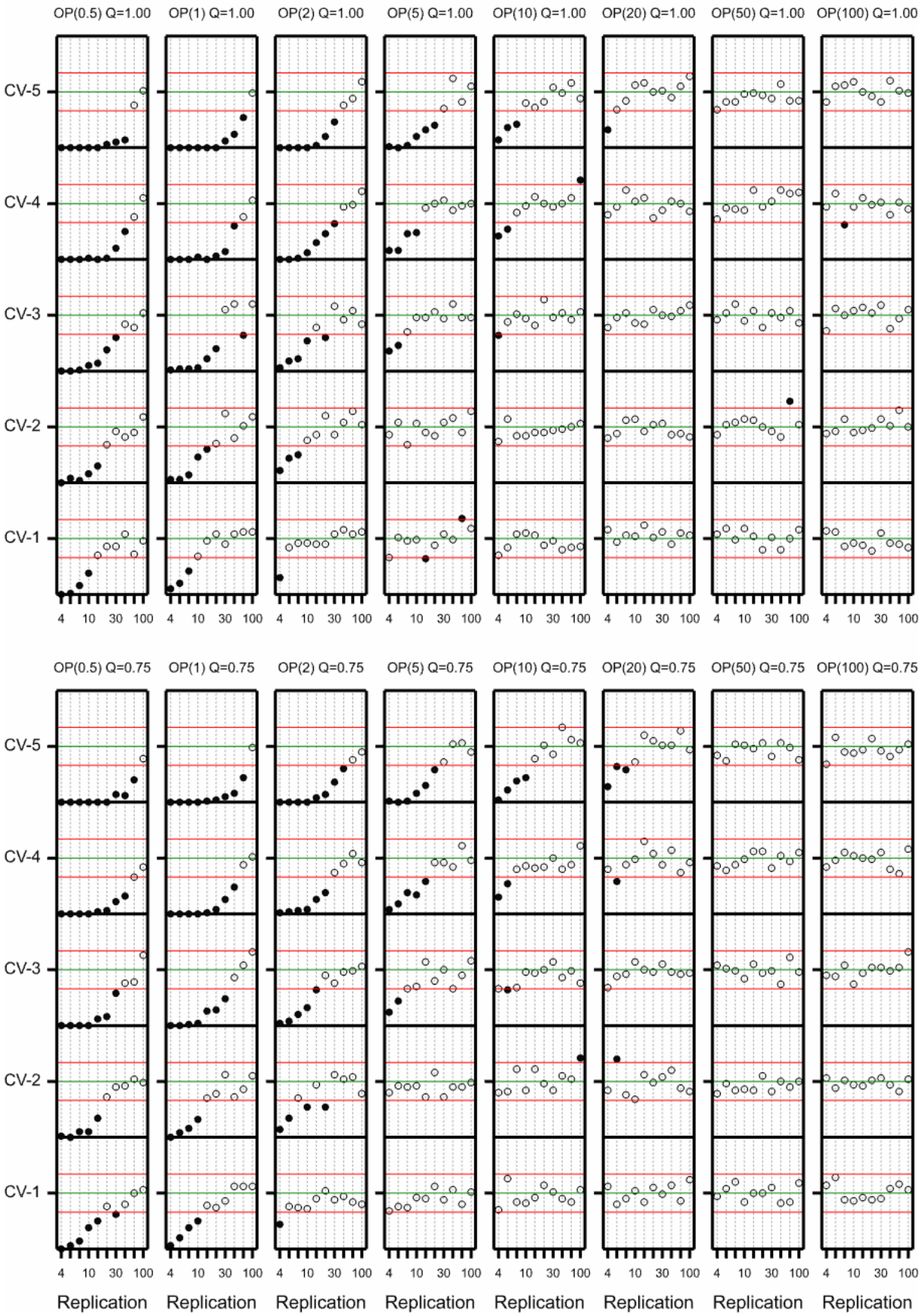
Appendix 1 M3: Coverage of SQ interval for Overdispersed Poisson



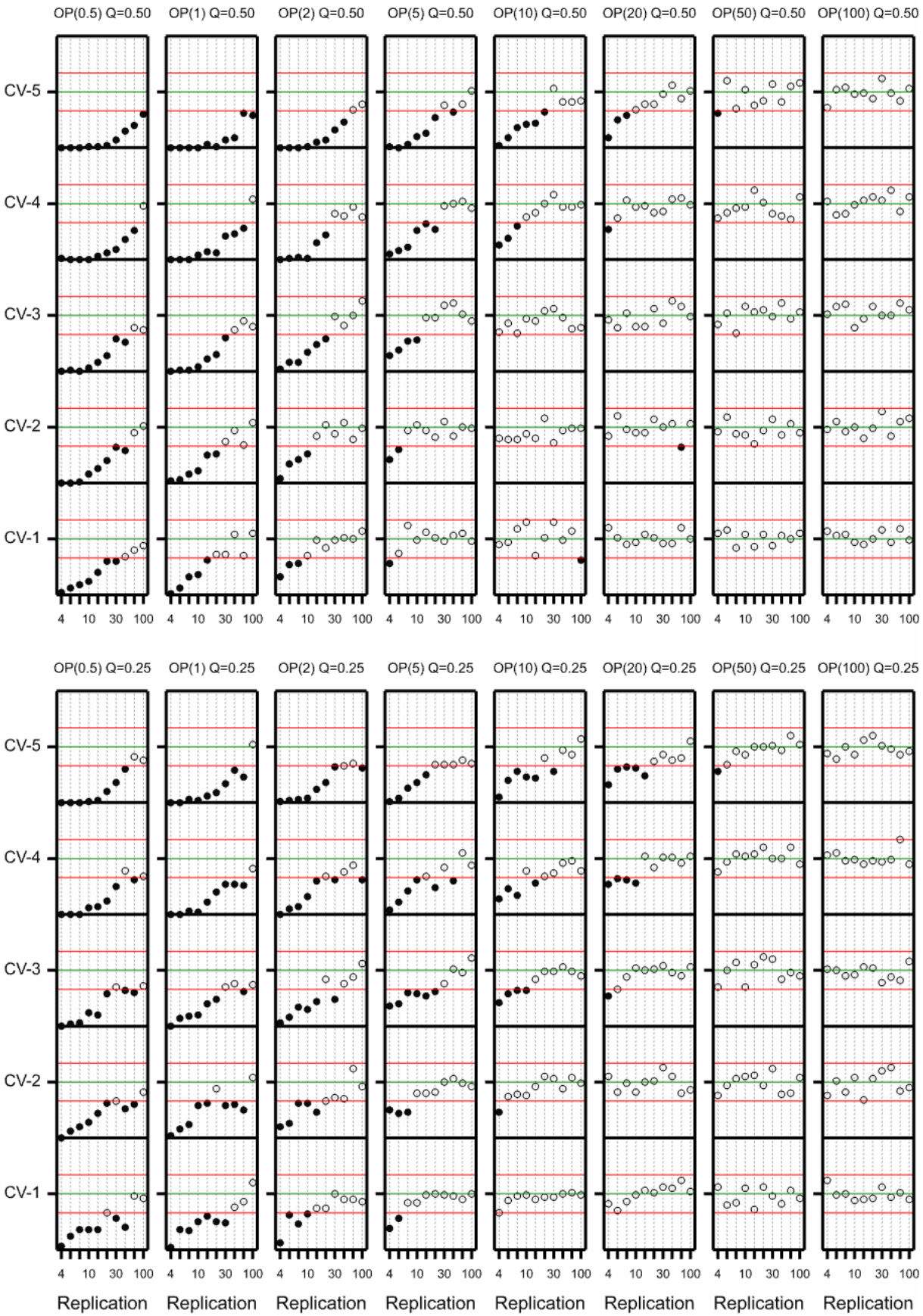
Appendix 1 M4: Coverage of SQ interval for Overdispersed Poisson



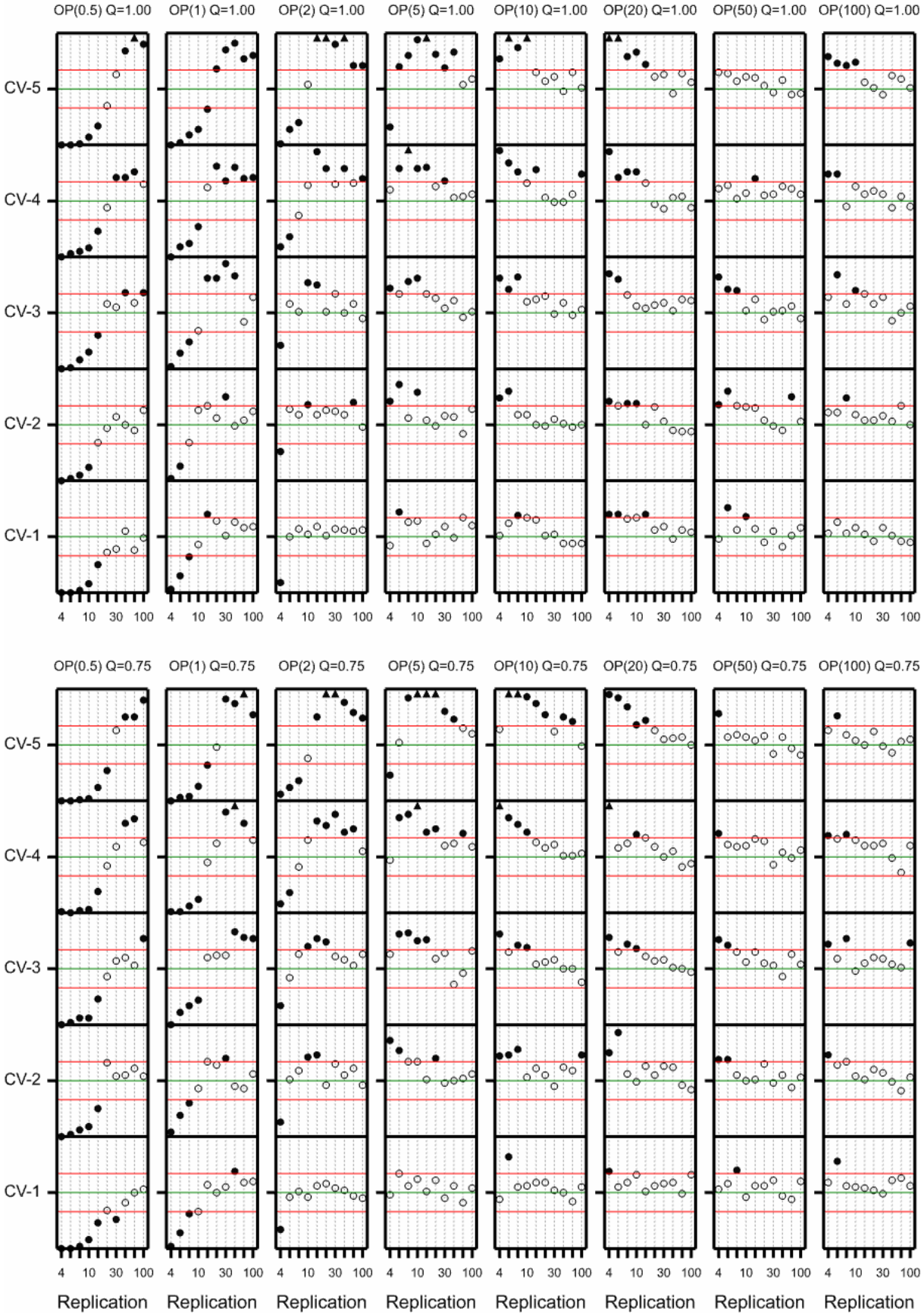
Appendix 1 M5: Coverage of OP interval for Overdispersed Poisson



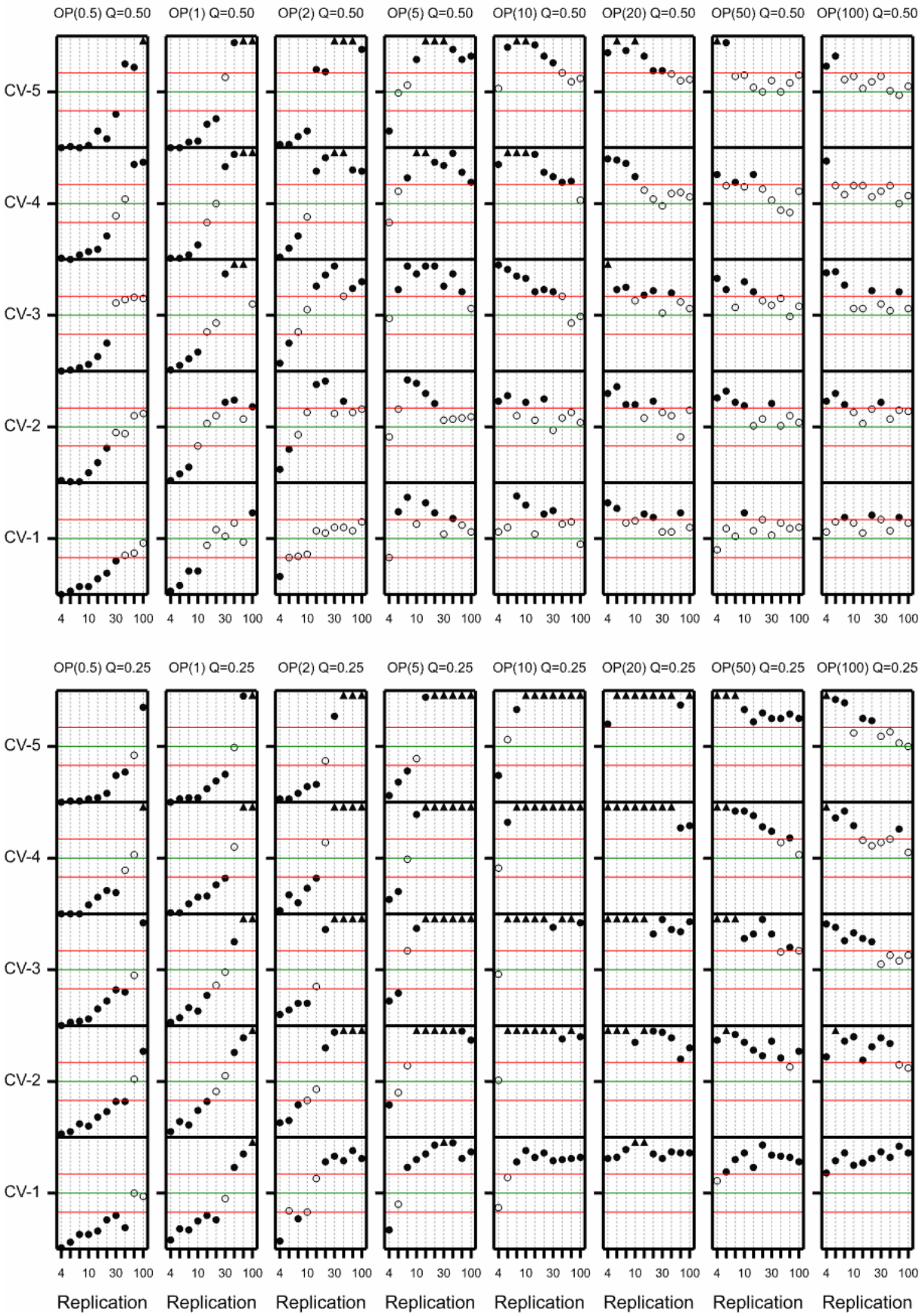
Appendix 1 M6: Coverage of OP interval for Overdispersed Poisson



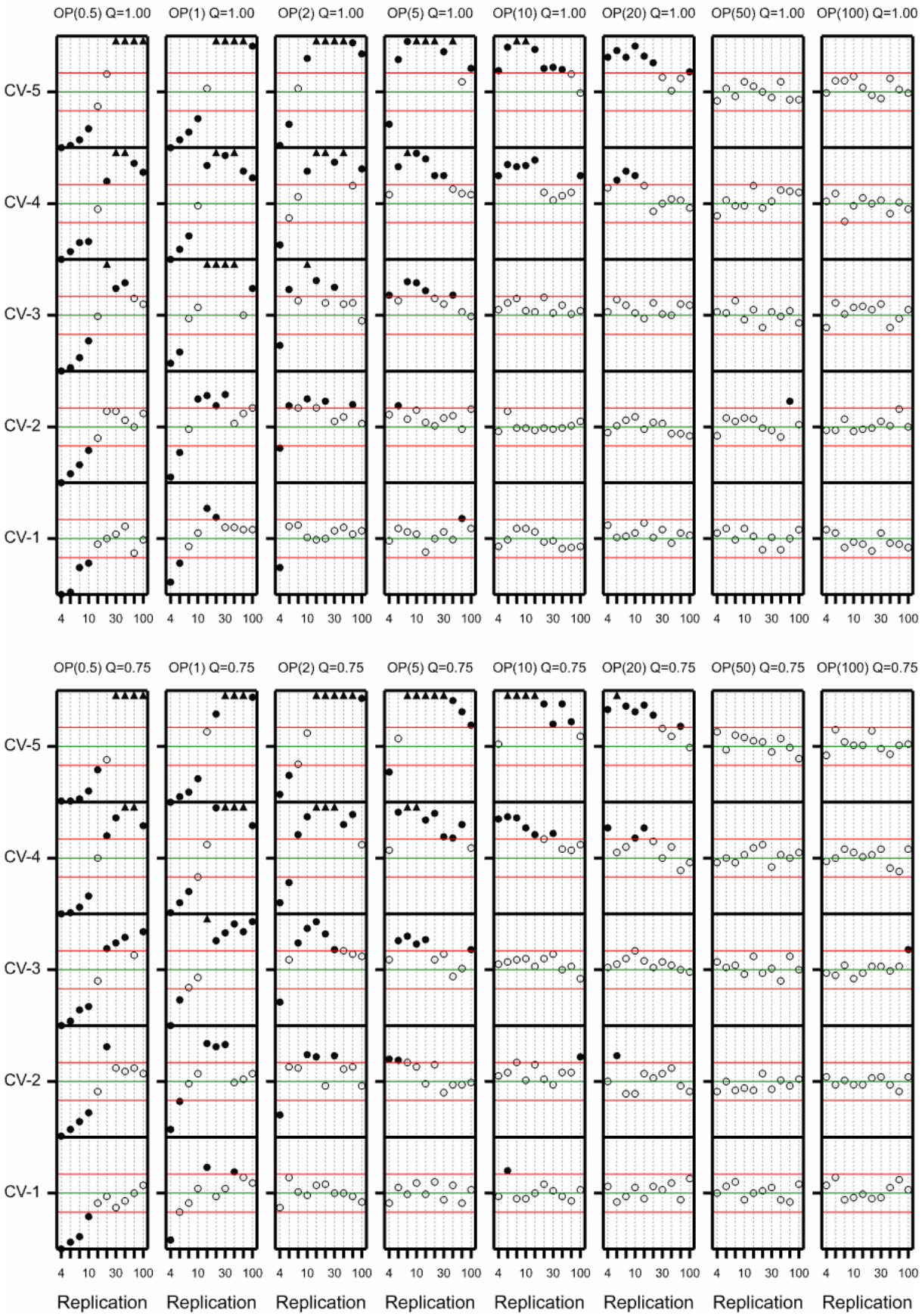
Appendix 1 M7: Coverage of NB interval for Overdispersed Poisson



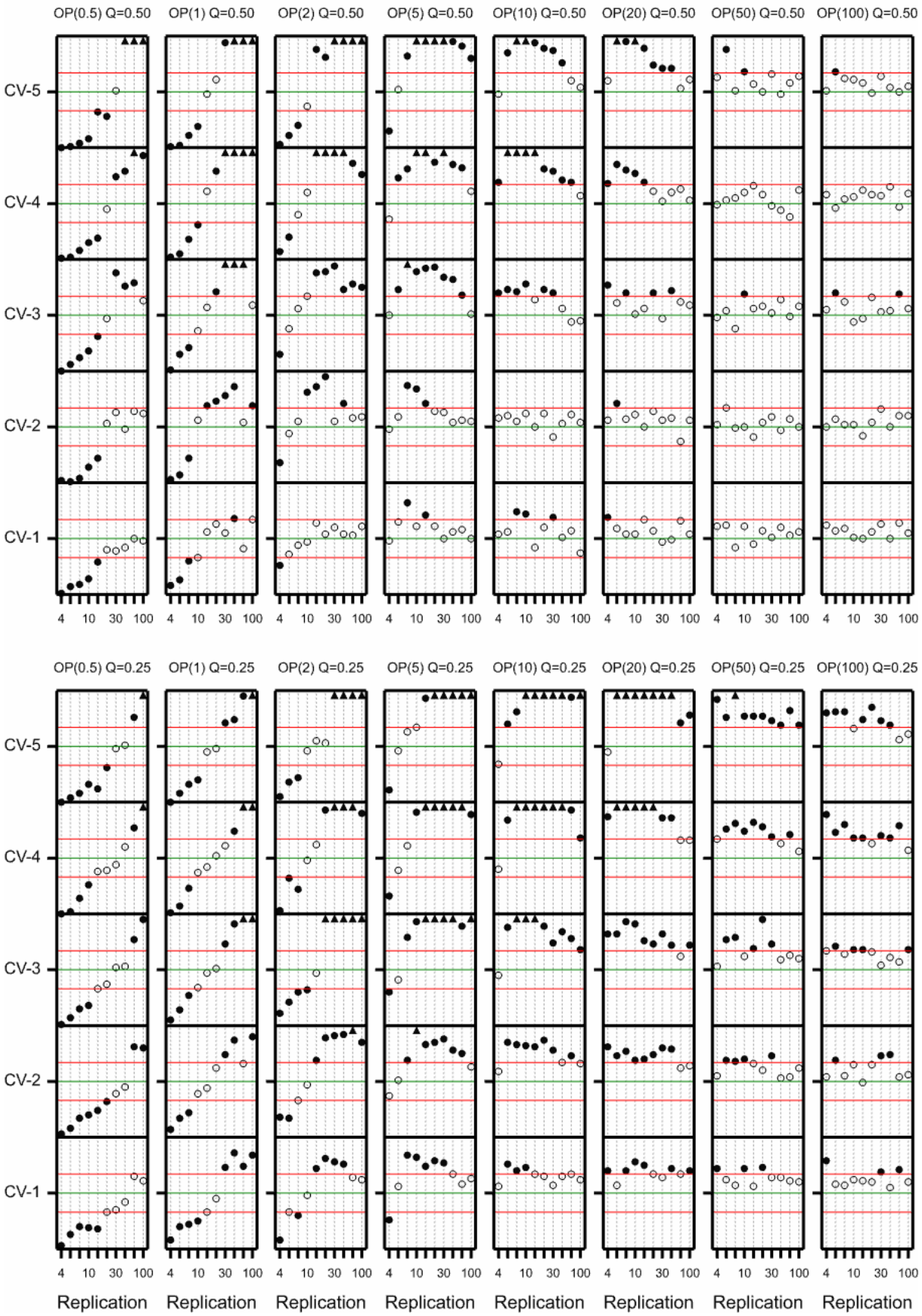
Appendix 1 M8: Coverage of NB interval for Overdispersed Poisson



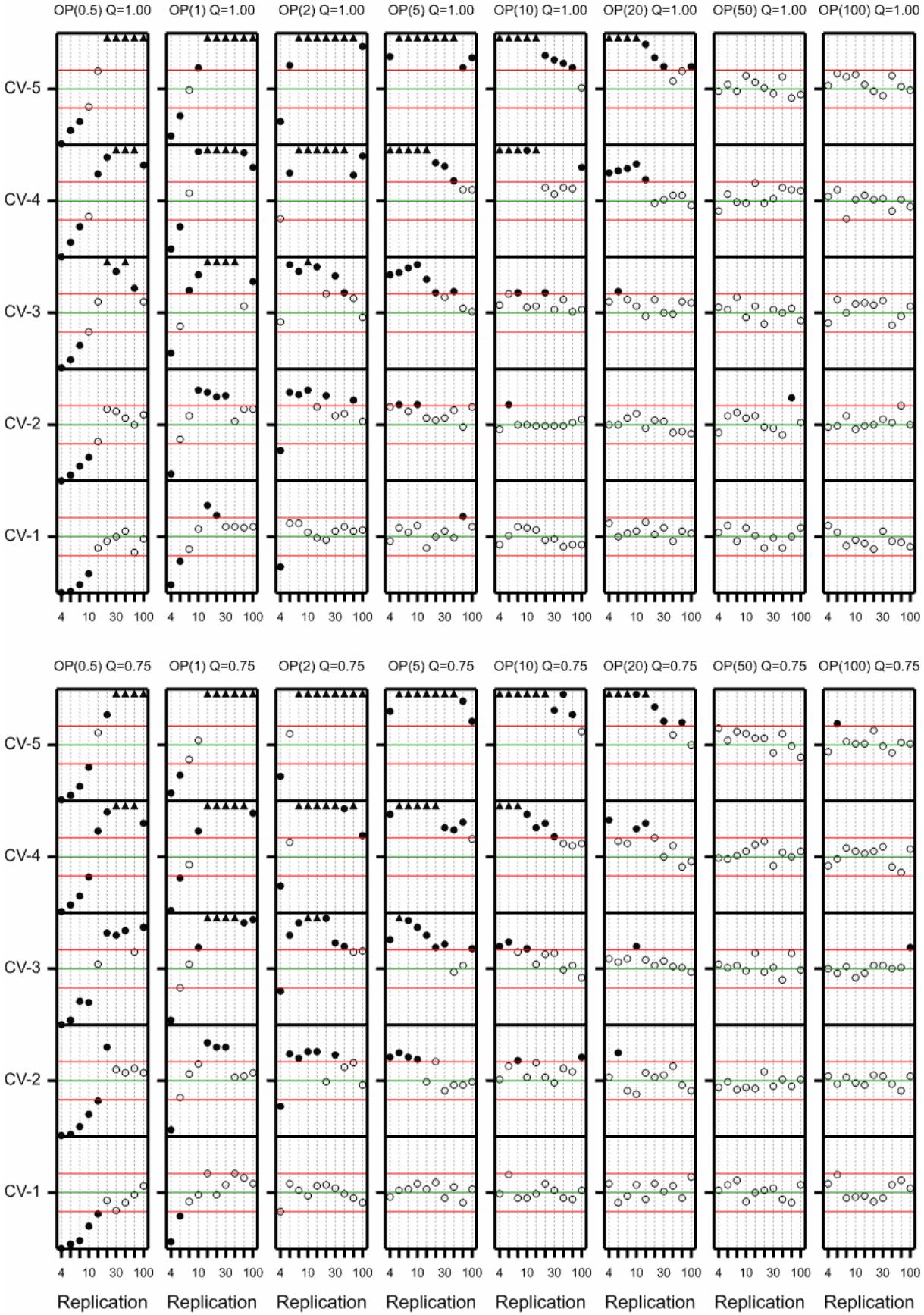
Appendix 1 M9: Coverage of P1 interval for Overdispersed Poisson



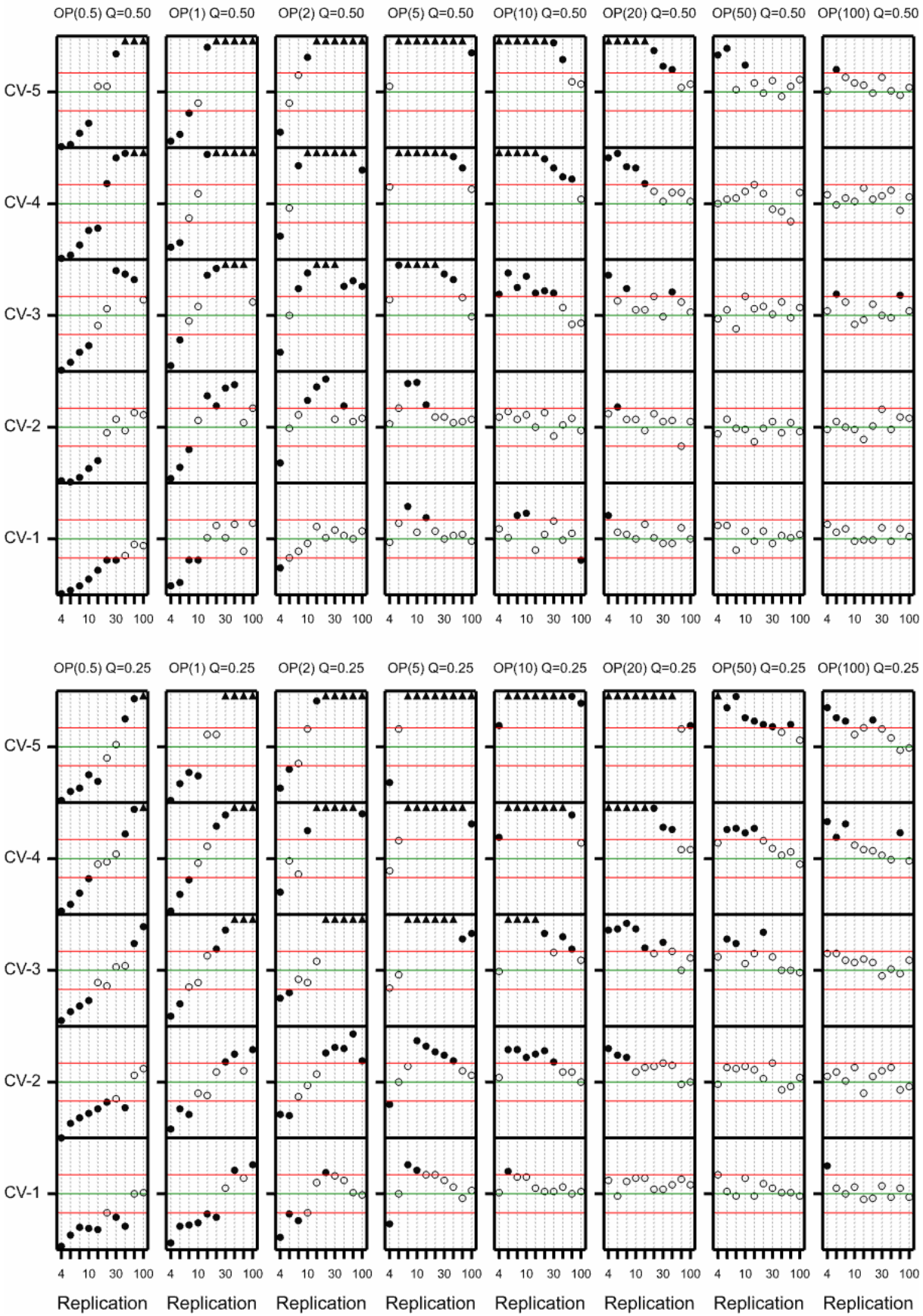
Appendix 1 M10: Coverage of P1 interval for Overdispersed Poisson



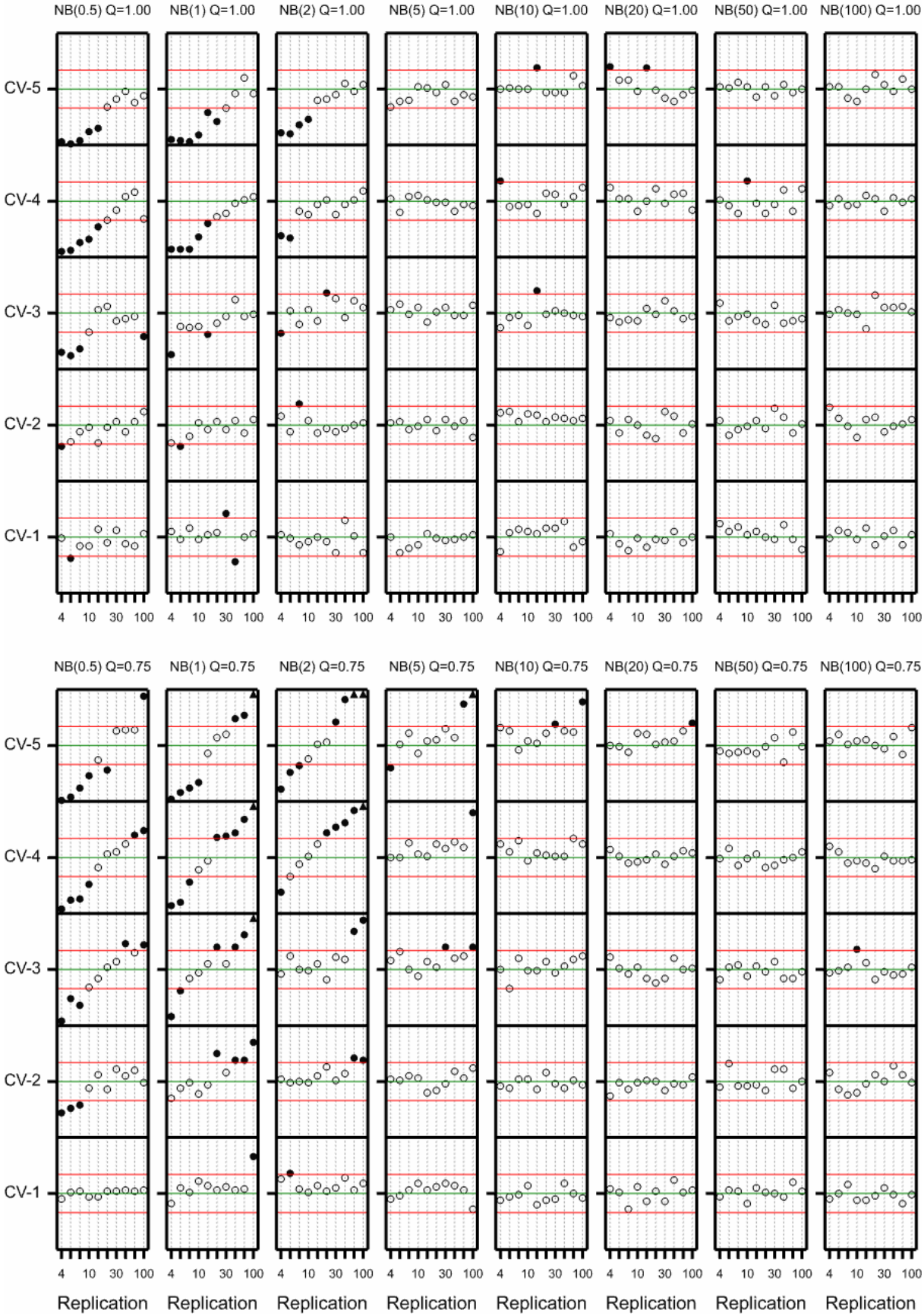
Appendix 1 M11: Coverage of GM interval for Overdispersed Poisson



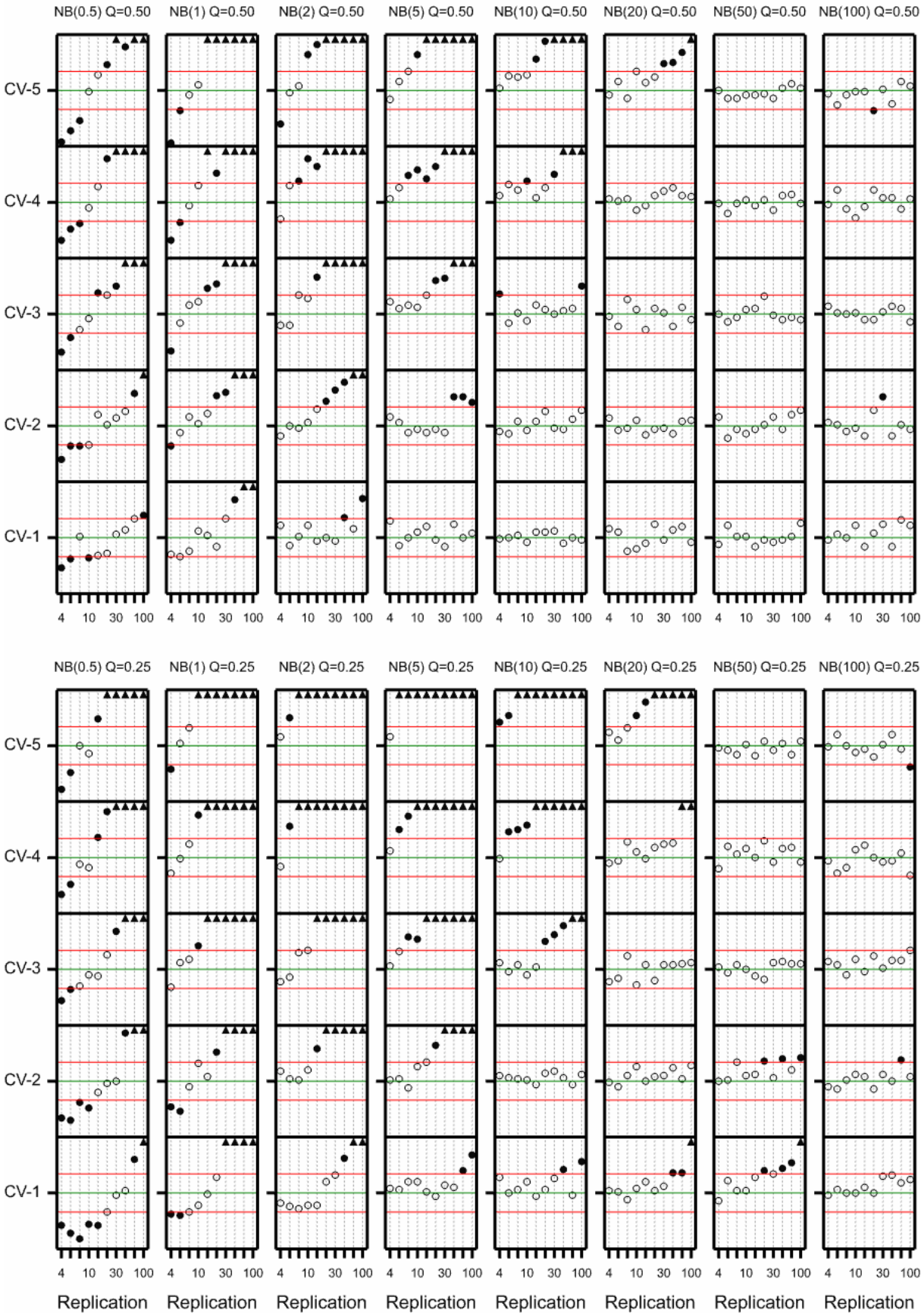
Appendix 1 M12: Coverage of GM interval for Overdispersed Poisson



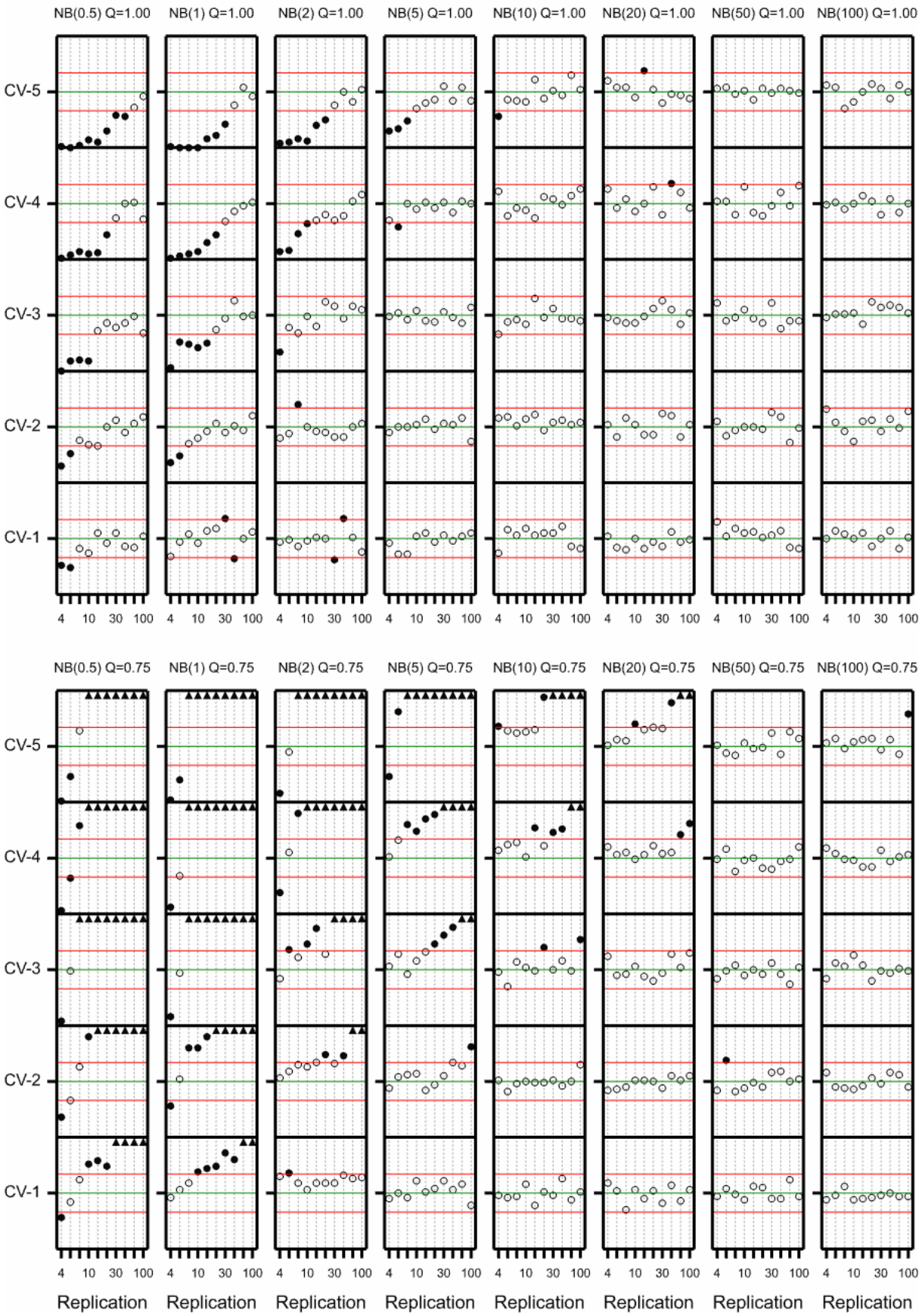
Appendix 1 N1: Coverage of LN interval for Negative Binomial



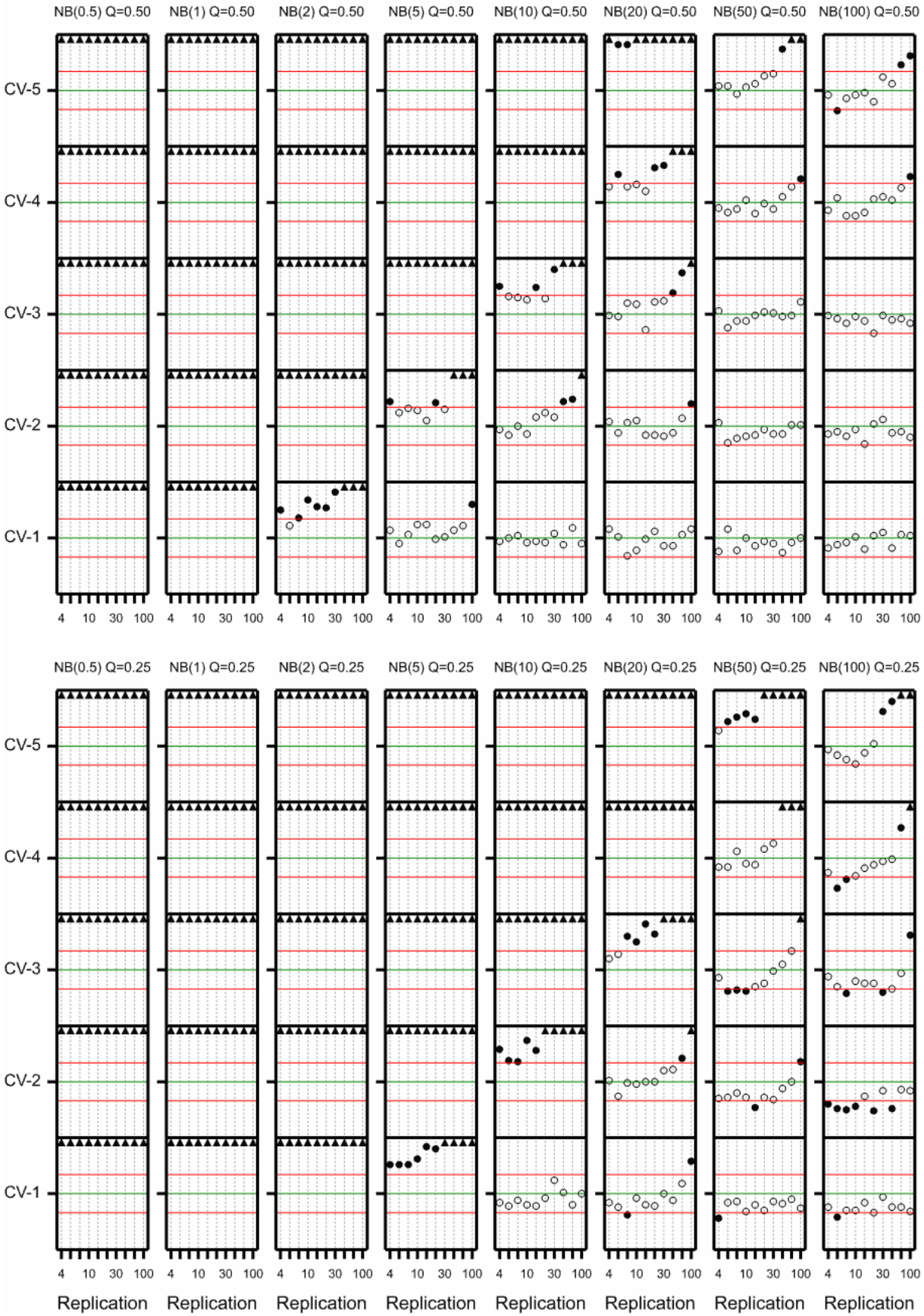
Appendix 1 N2: Coverage of LN interval for Negative Binomial



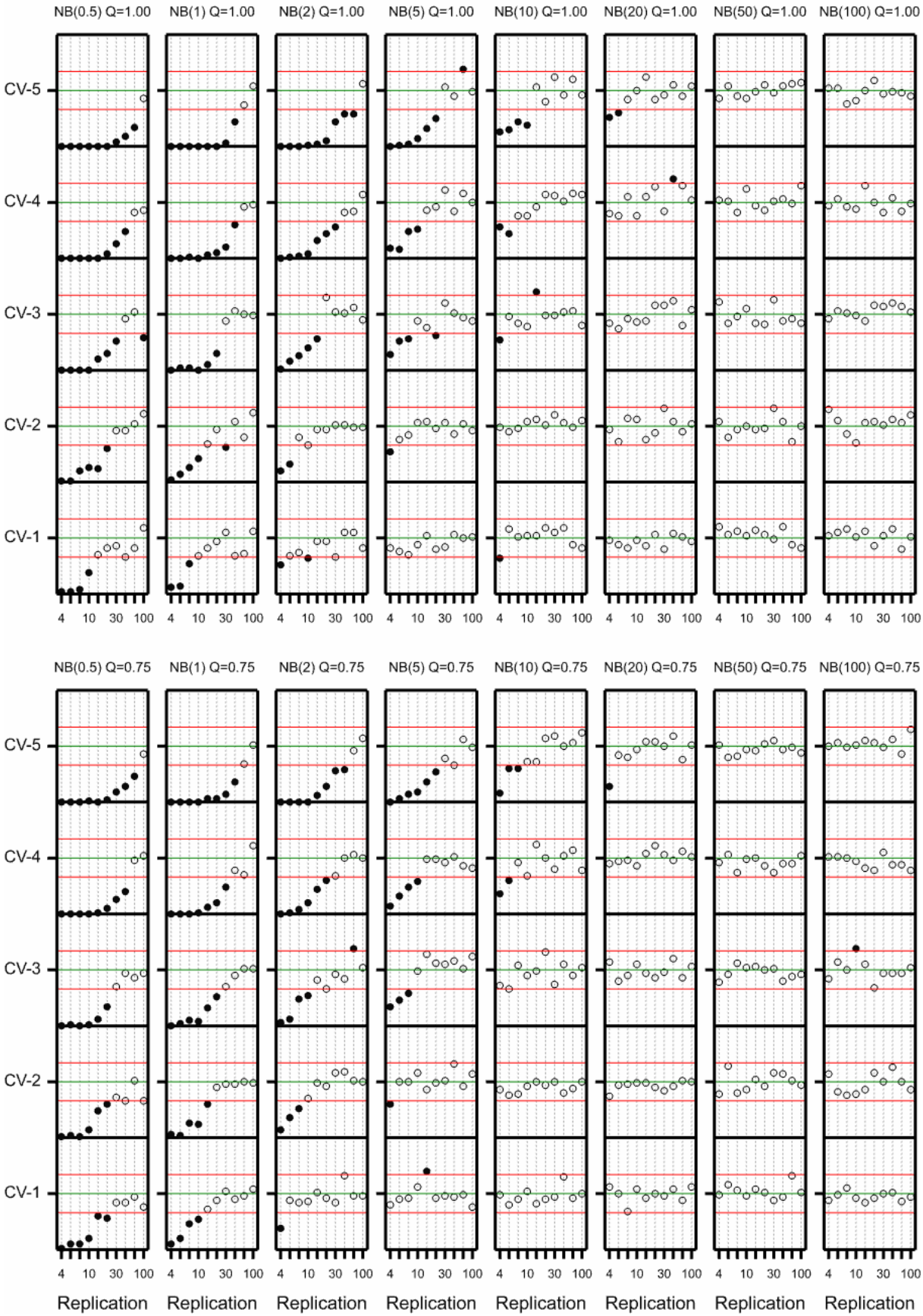
Appendix 1 N3: Coverage of SQ interval for Negative Binomial



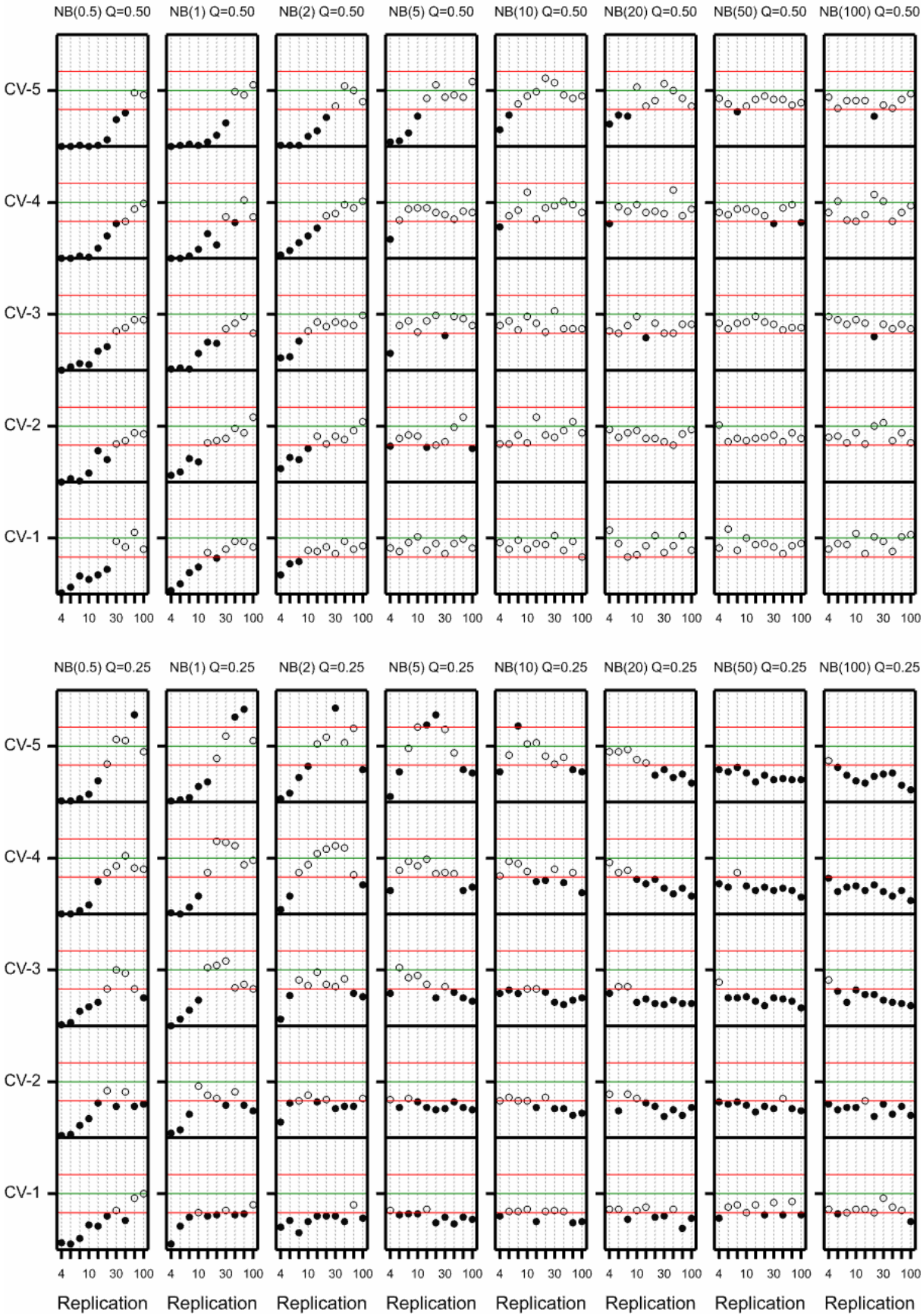
Appendix 1 N4: Coverage of SQ interval for Negative Binomial



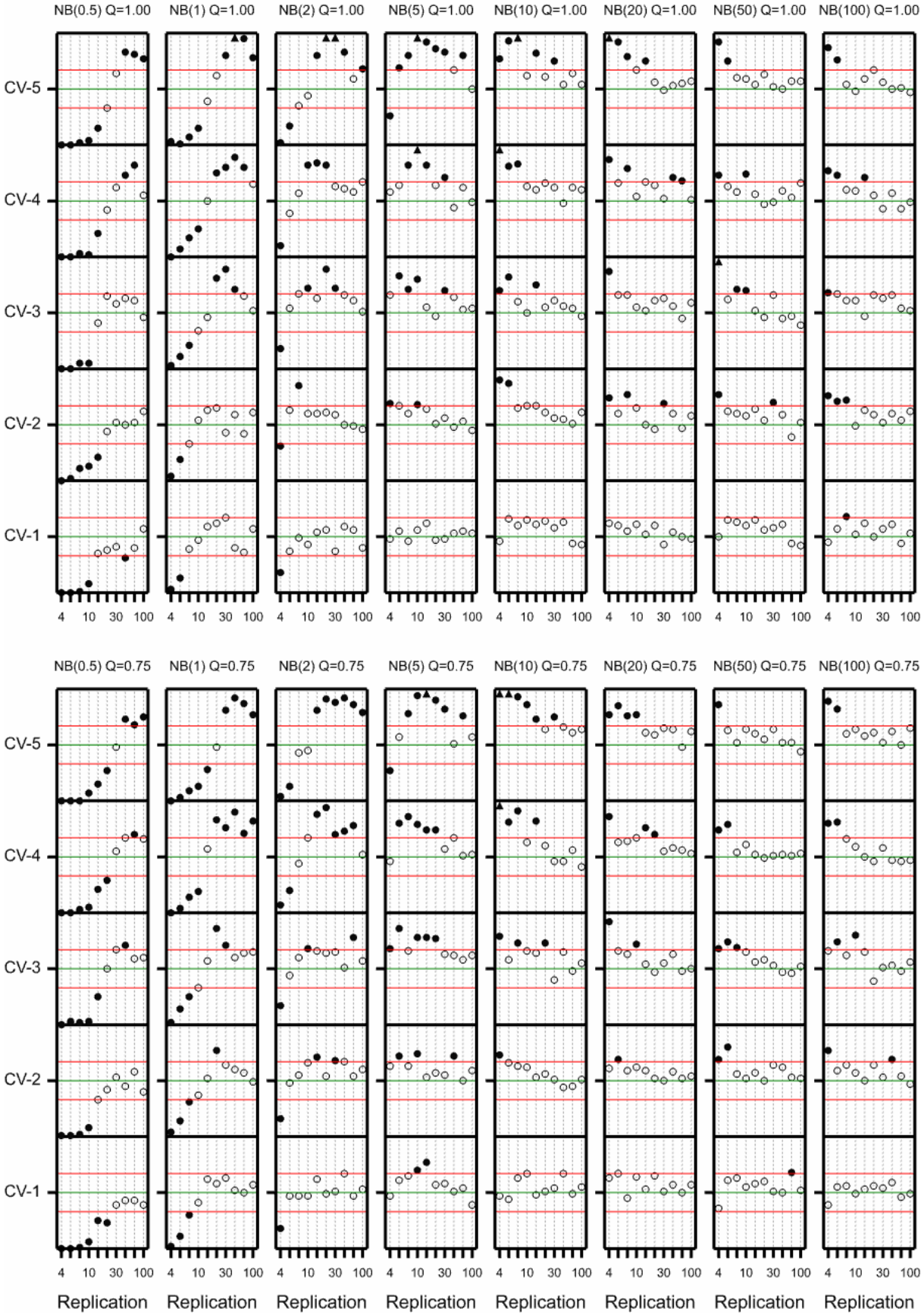
Appendix 1 N5: Coverage of OP interval for Negative Binomial



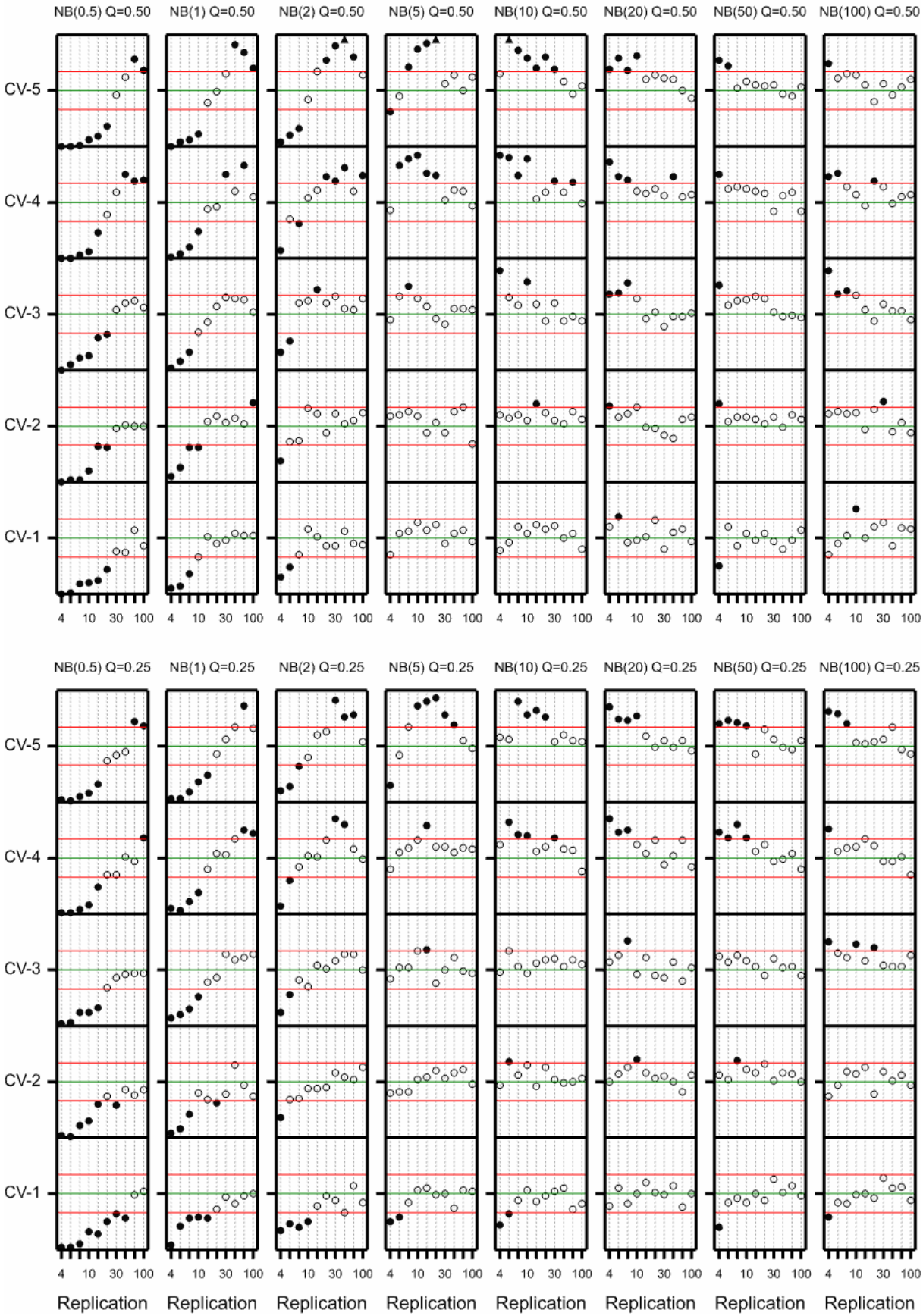
Appendix 1 N6: Coverage of OP interval for Negative Binomial



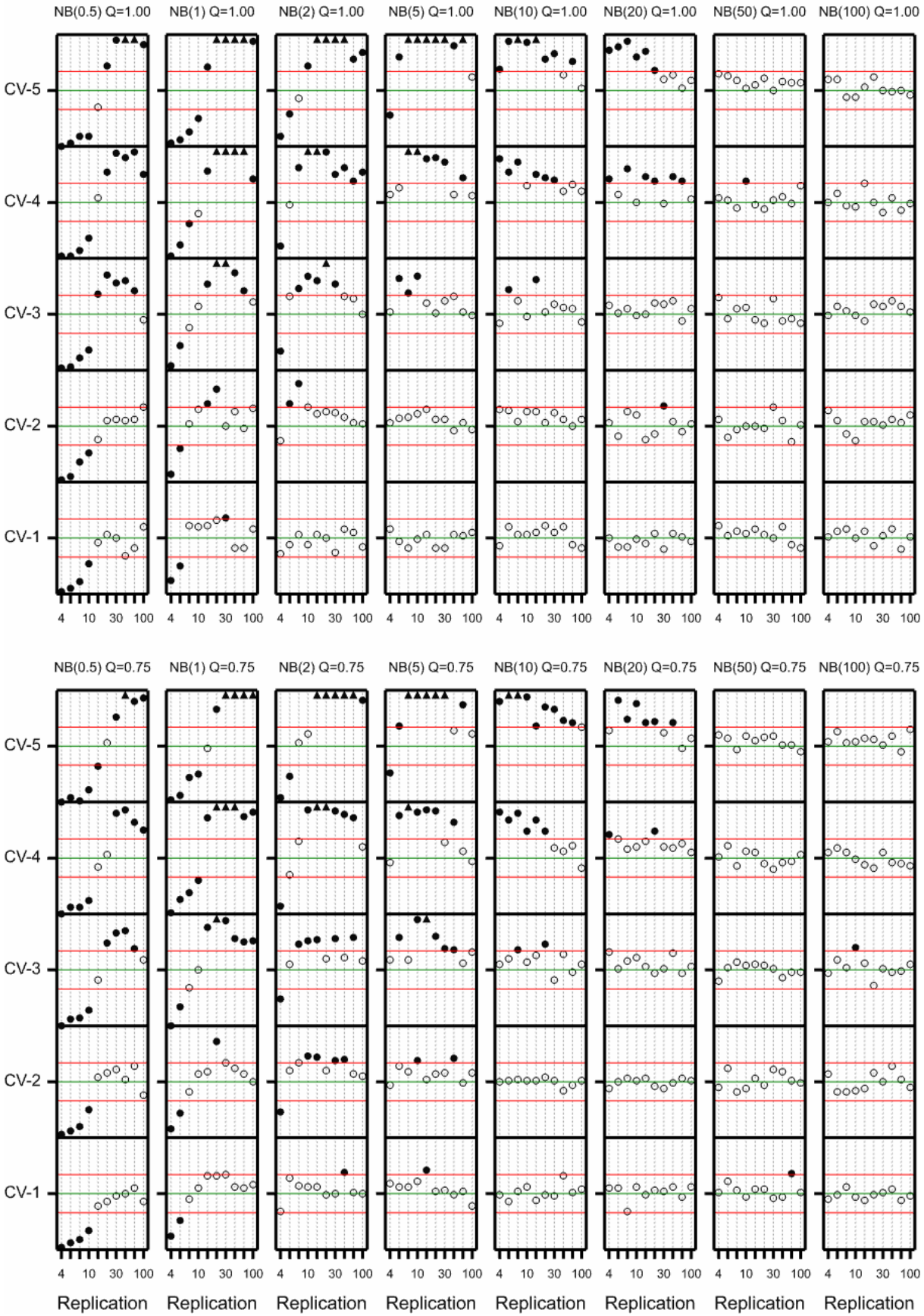
Appendix 1 N7: Coverage of NB interval for Negative Binomial



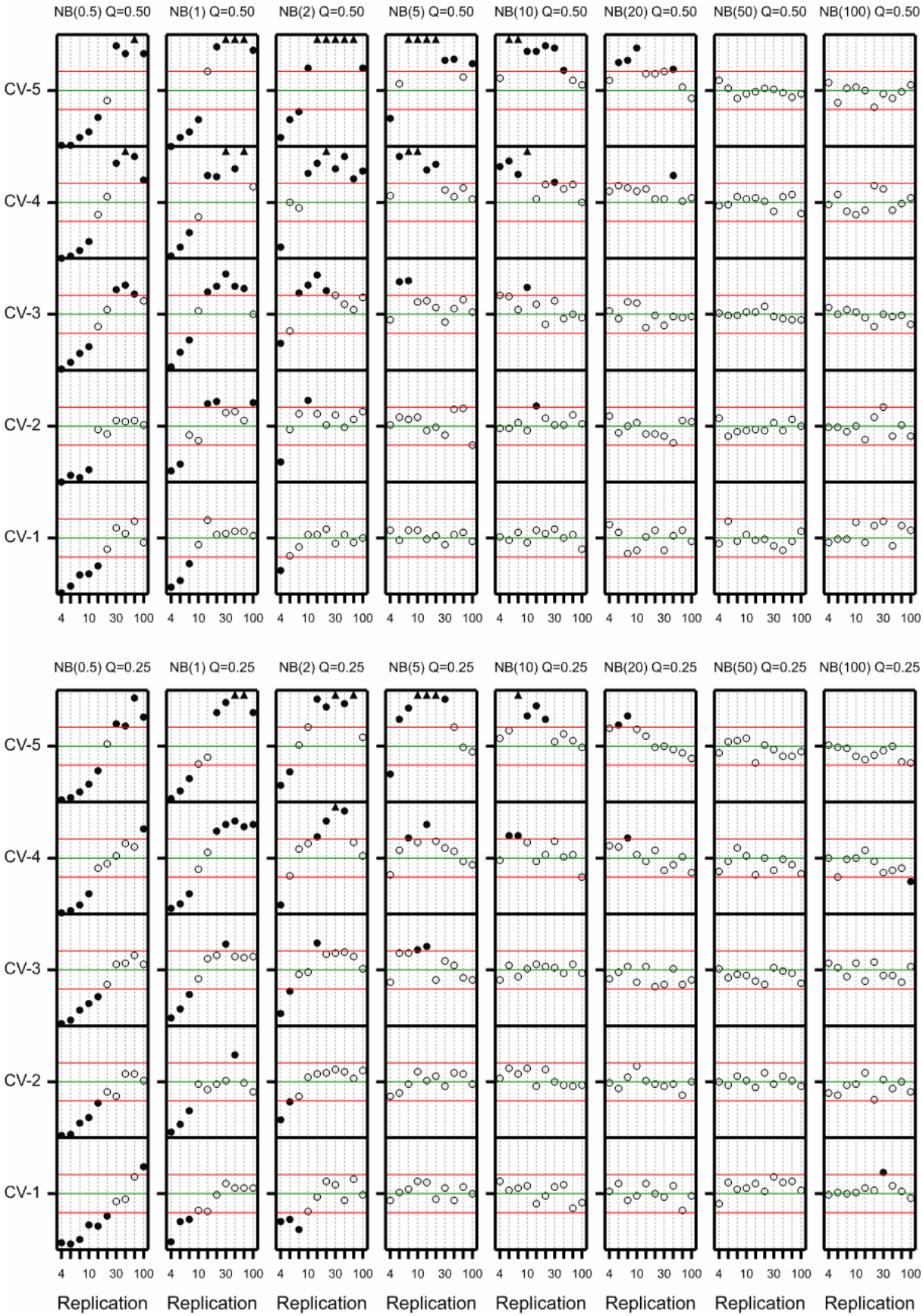
Appendix 1 N8: Coverage of NB interval for Negative Binomial



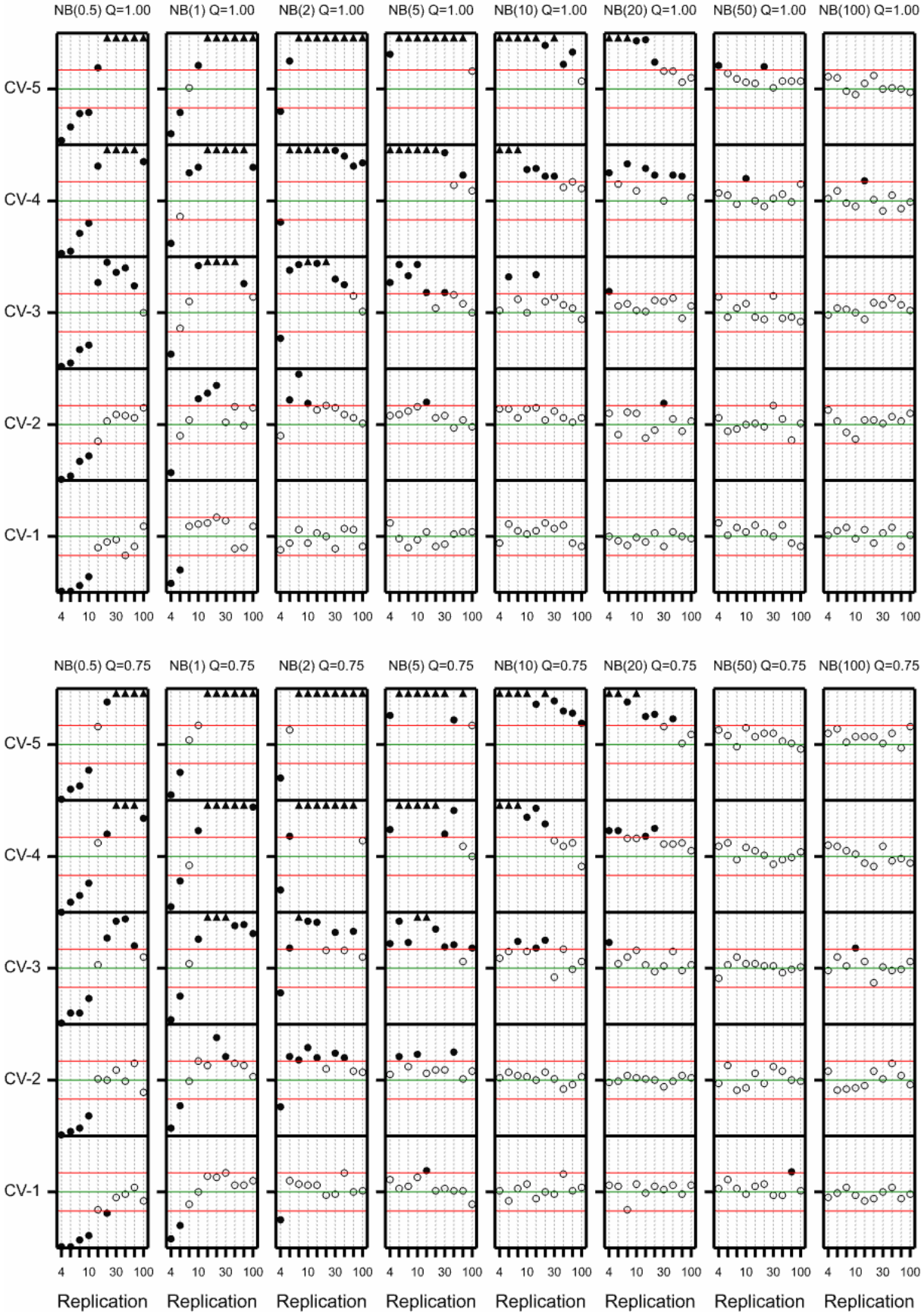
Appendix 1 N9: Coverage of P1 interval for Negative Binomial



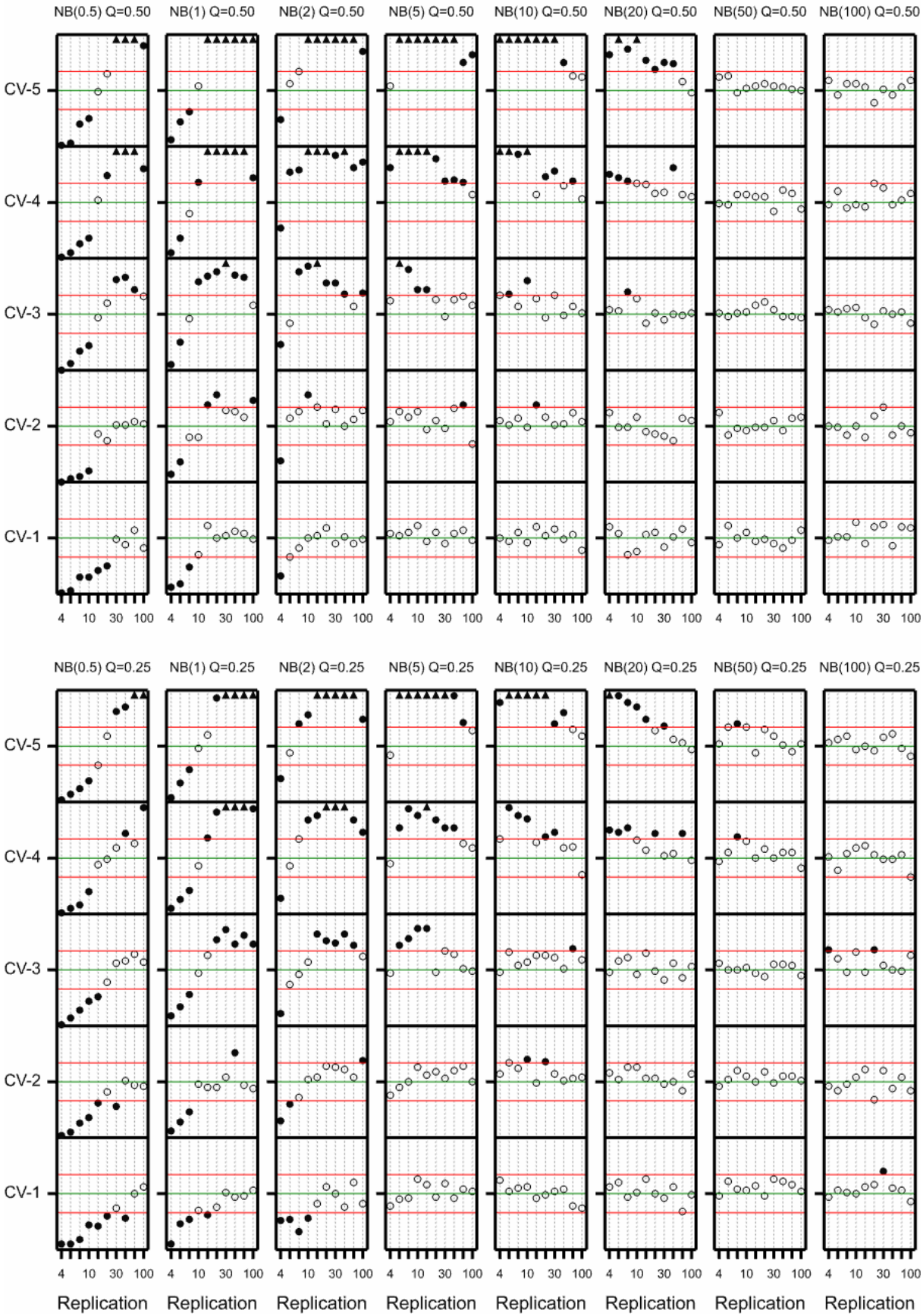
Appendix 1 N10: Coverage of P1 interval for Negative Binomial



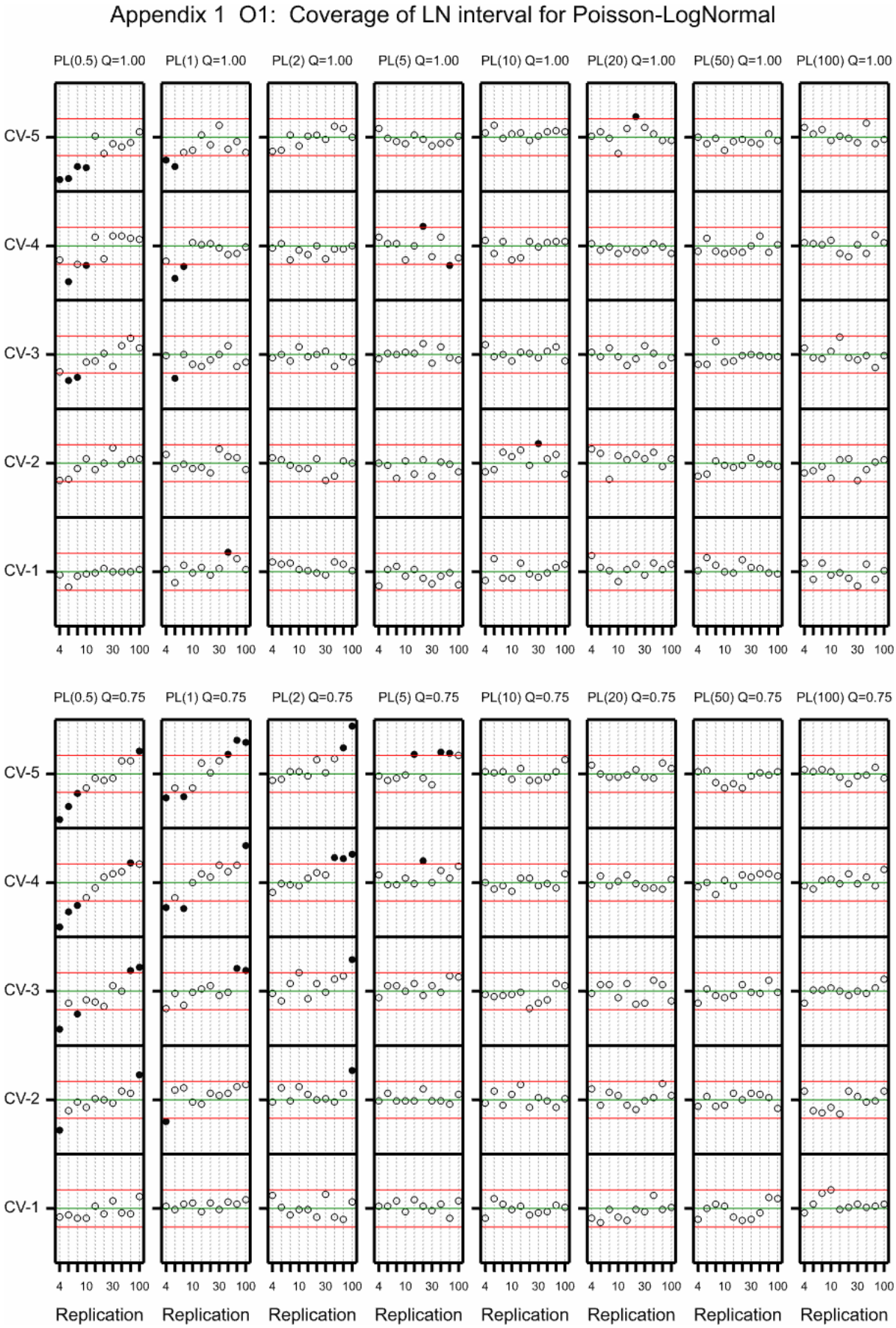
Appendix 1 N11: Coverage of GM interval for Negative Binomial



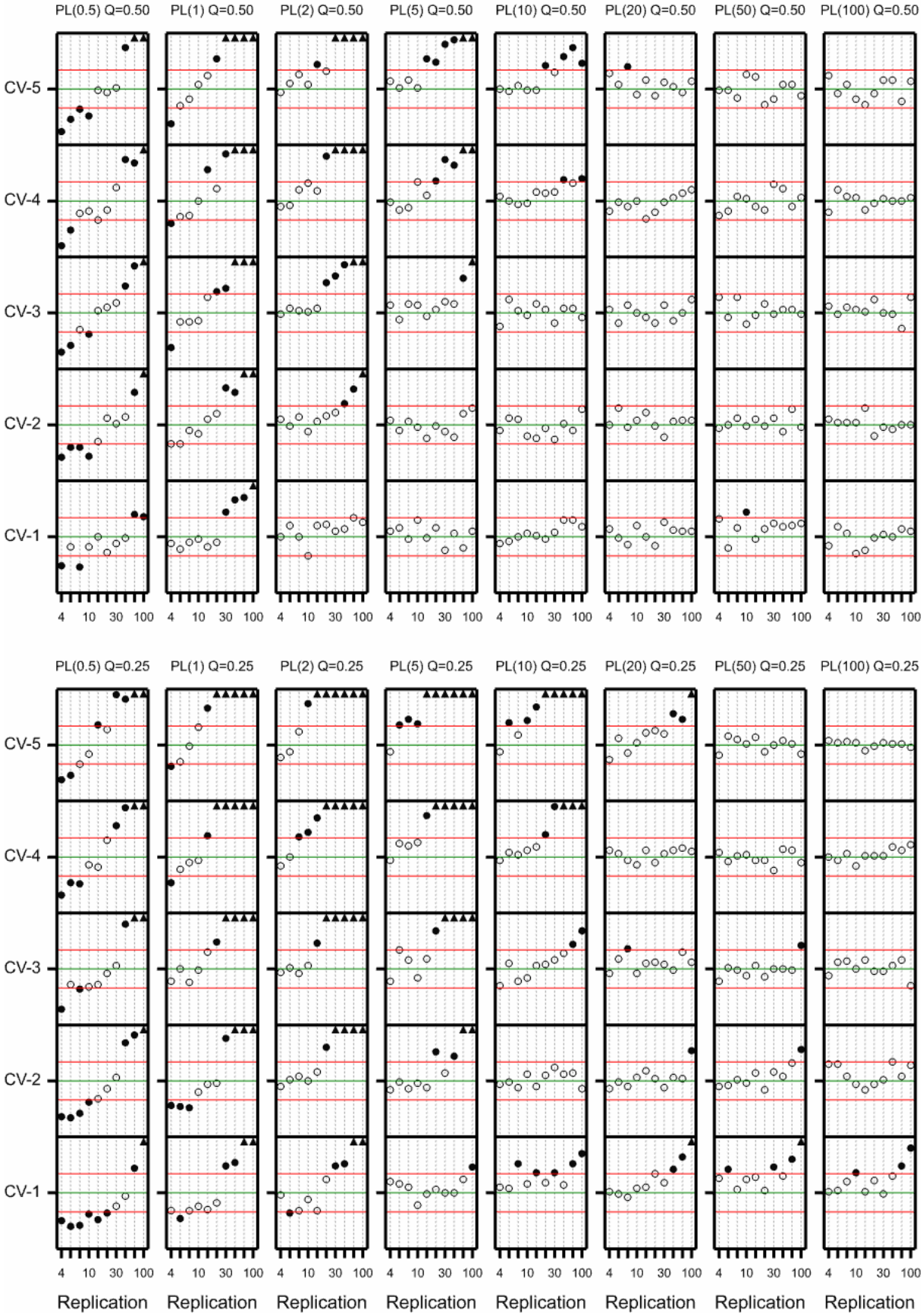
Appendix 1 N12: Coverage of GM interval for Negative Binomial



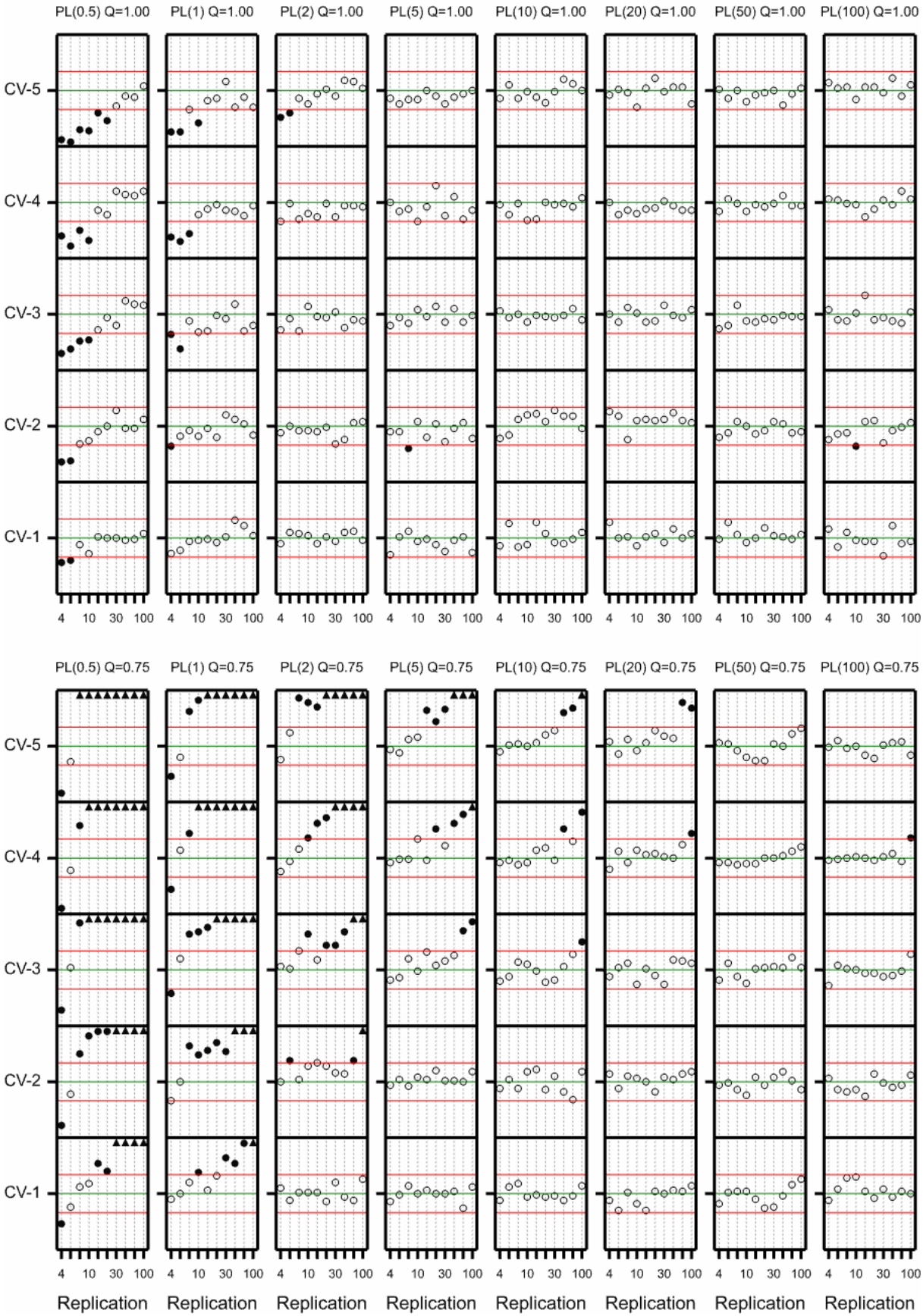
Appendix 1 O1: Coverage of LN interval for Poisson-LogNormal



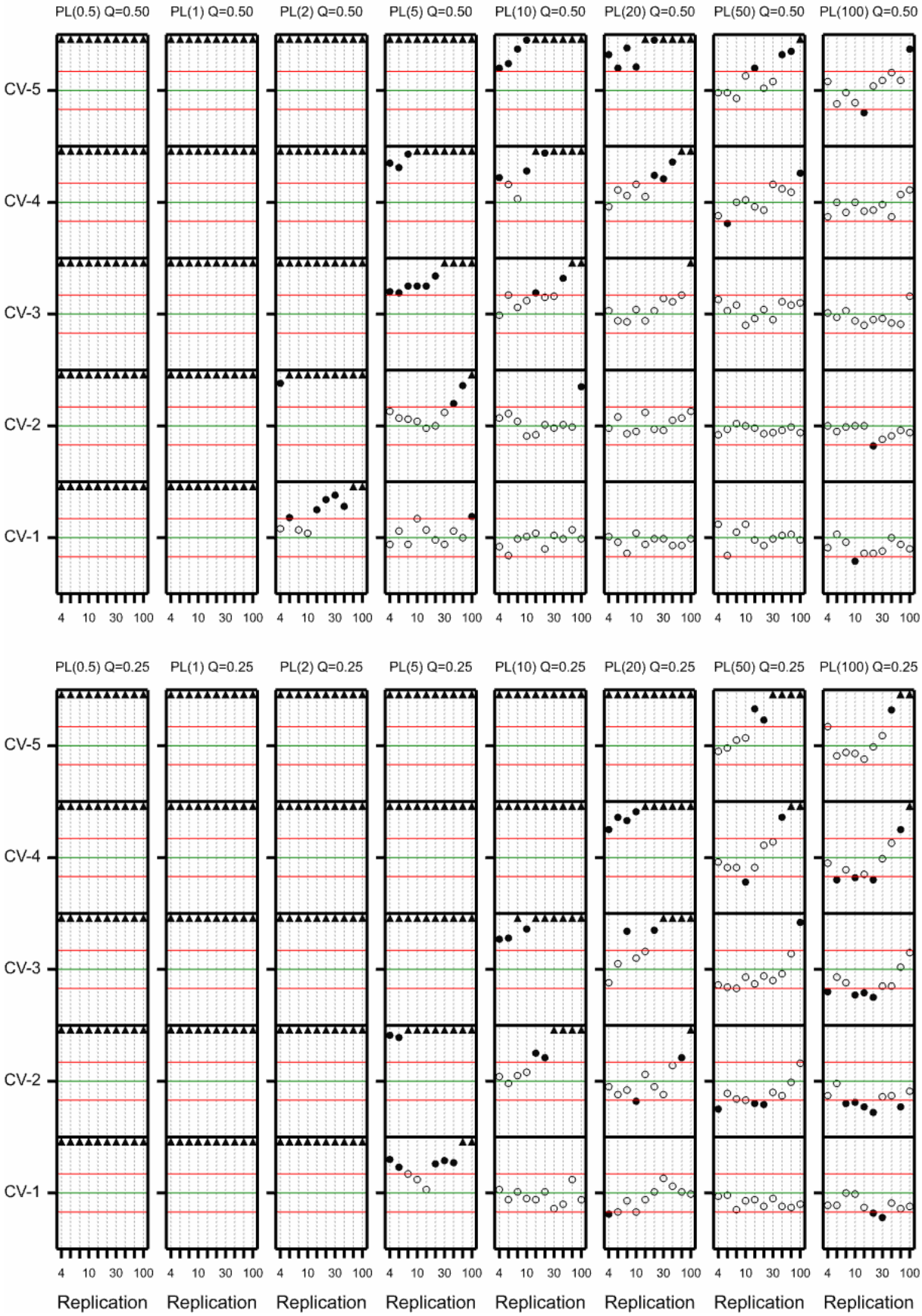
Appendix 1 O2: Coverage of LN interval for Poisson-LogNormal



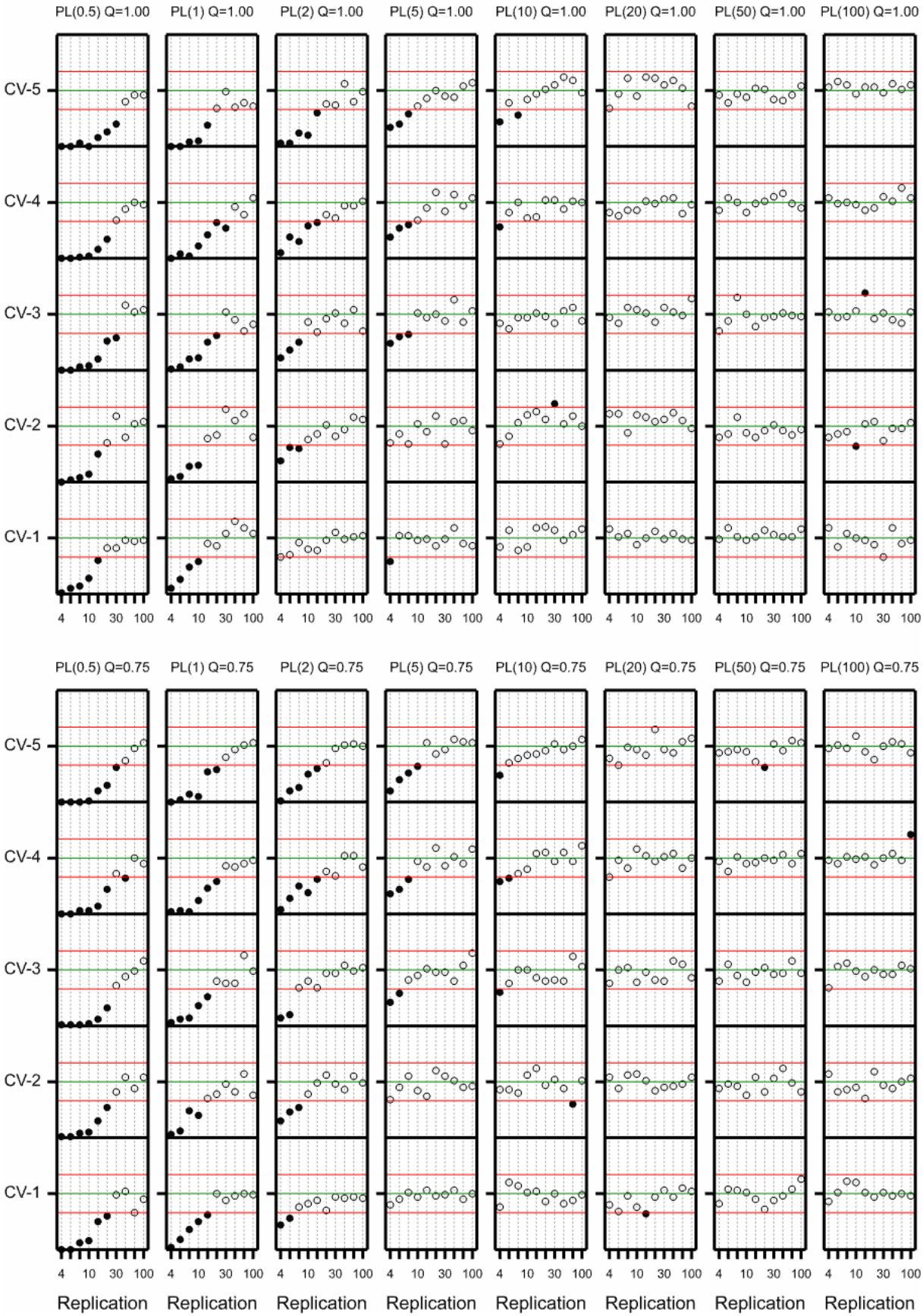
Appendix 1 O3: Coverage of SQ interval for Poisson-LogNormal



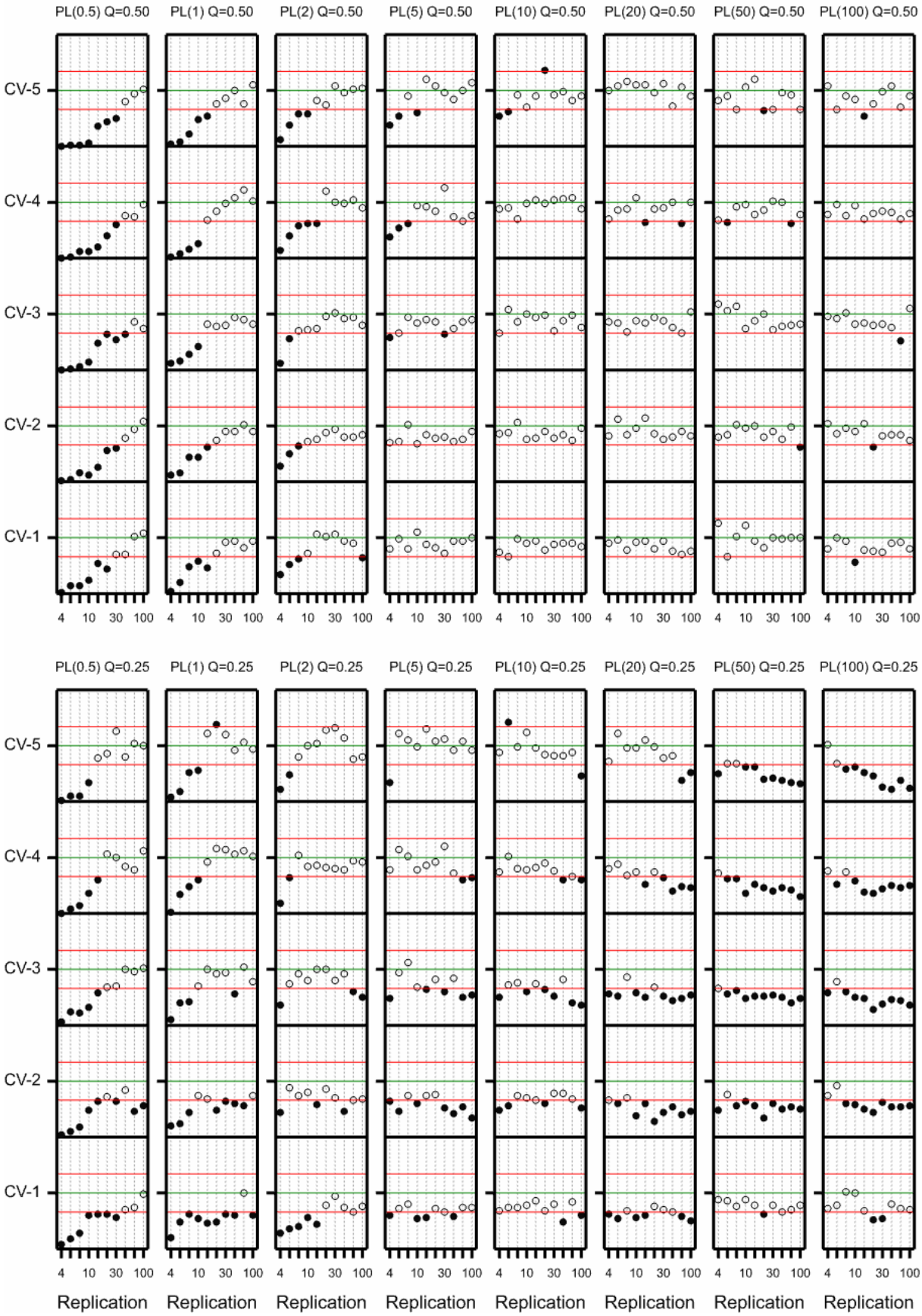
Appendix 1 O4: Coverage of SQ interval for Poisson-LogNormal



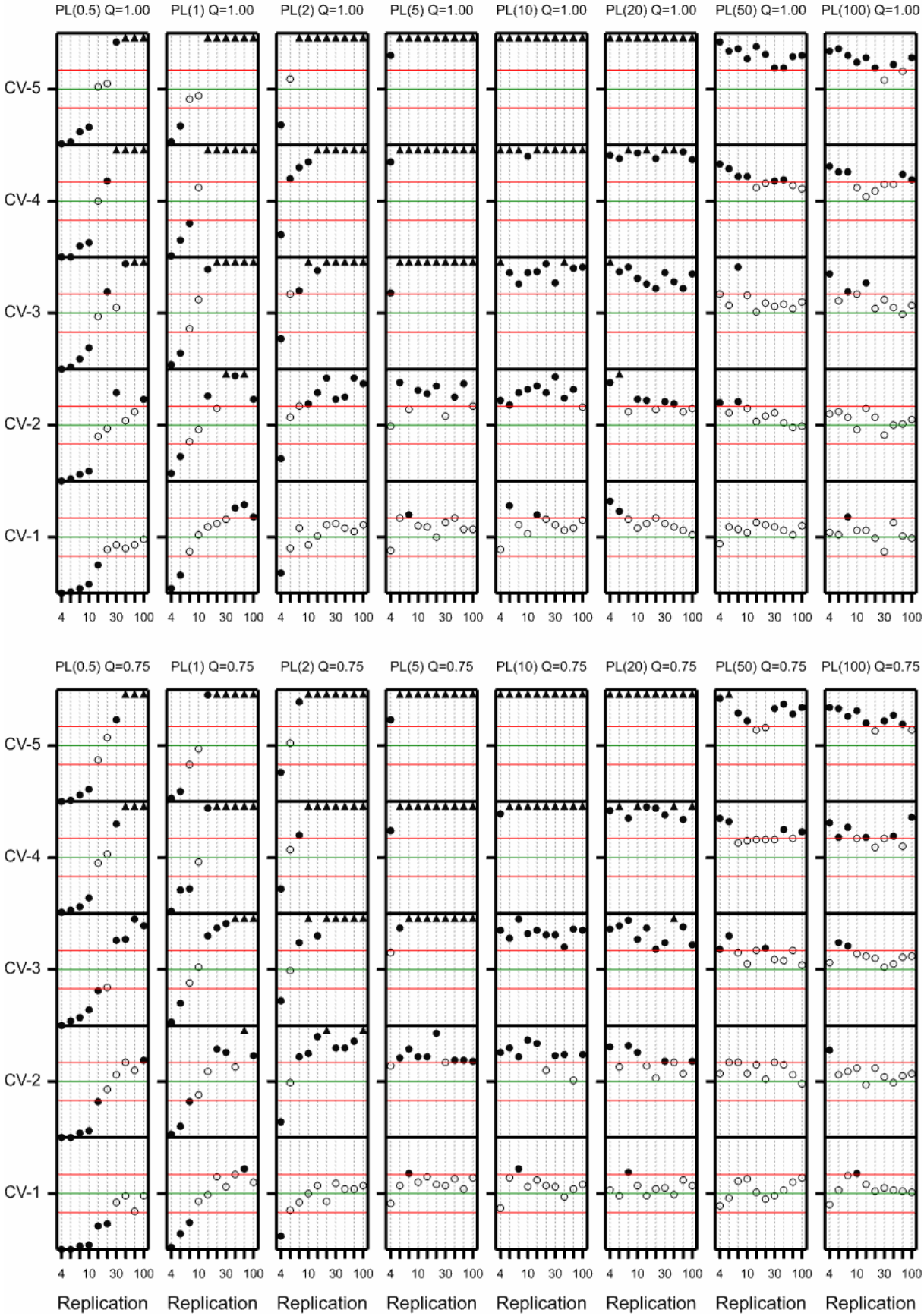
Appendix 1 O5: Coverage of OP interval for Poisson-LogNormal



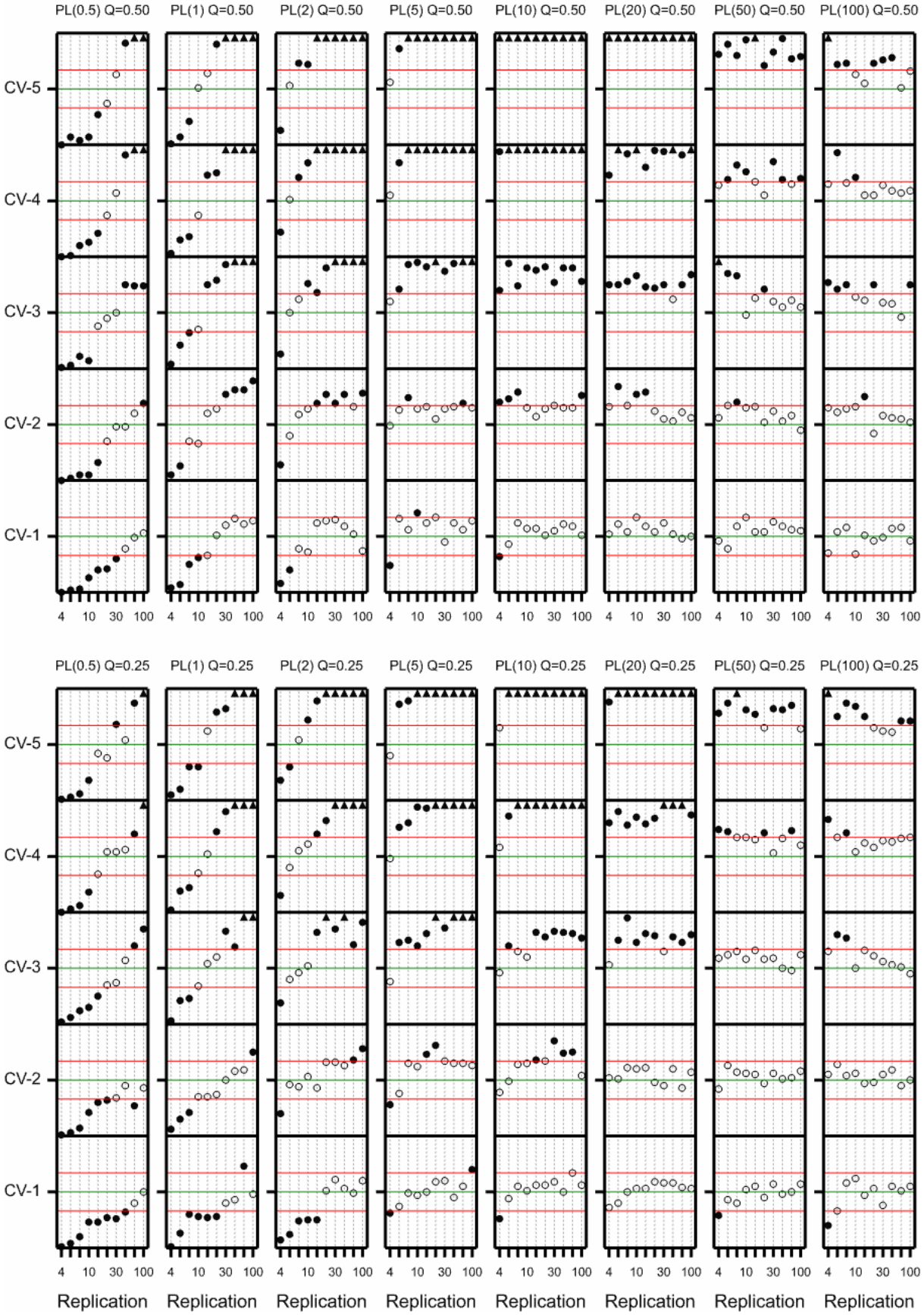
Appendix 1 O6: Coverage of OP interval for Poisson-LogNormal



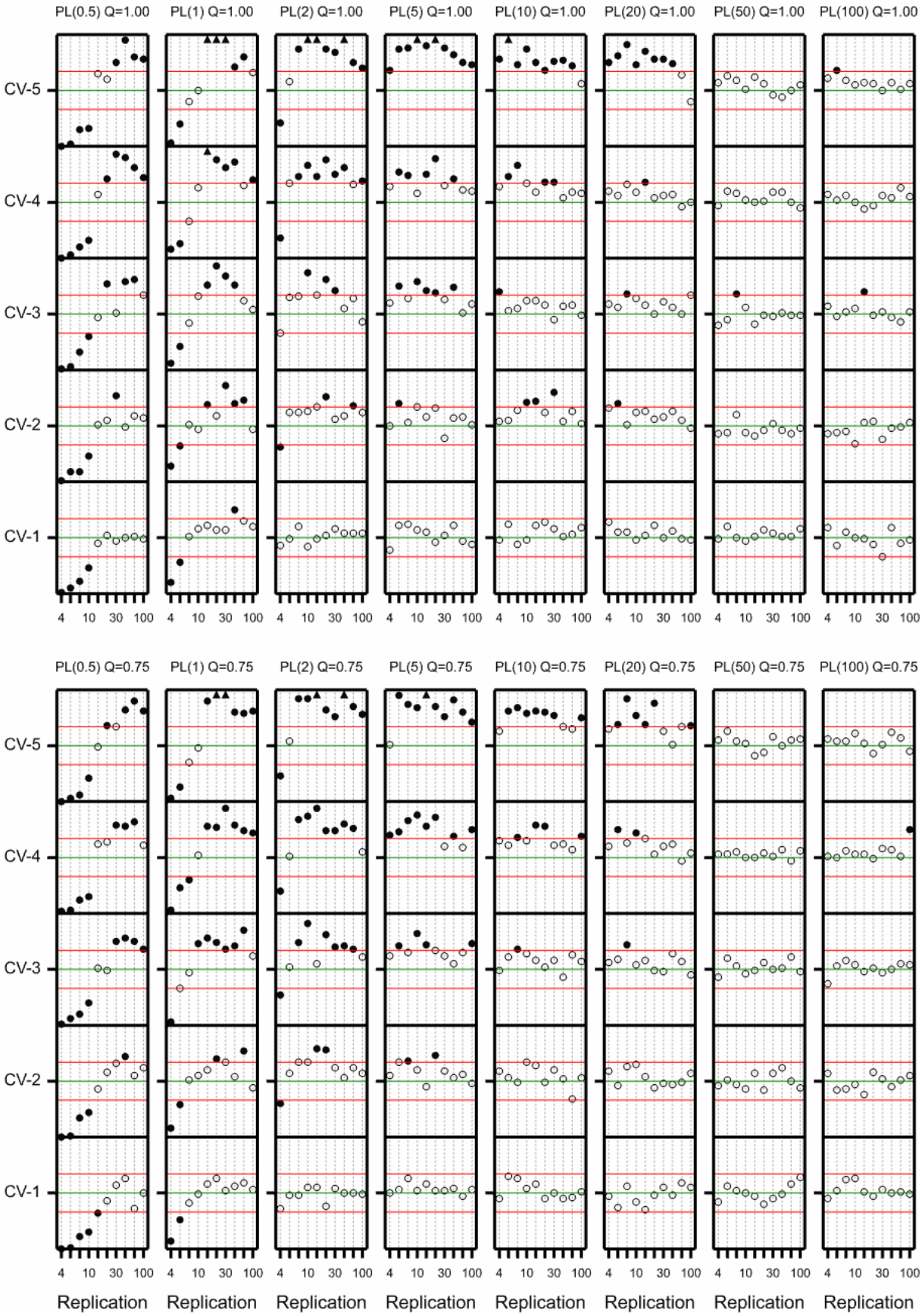
Appendix 1 O7: Coverage of NB interval for Poisson-LogNormal



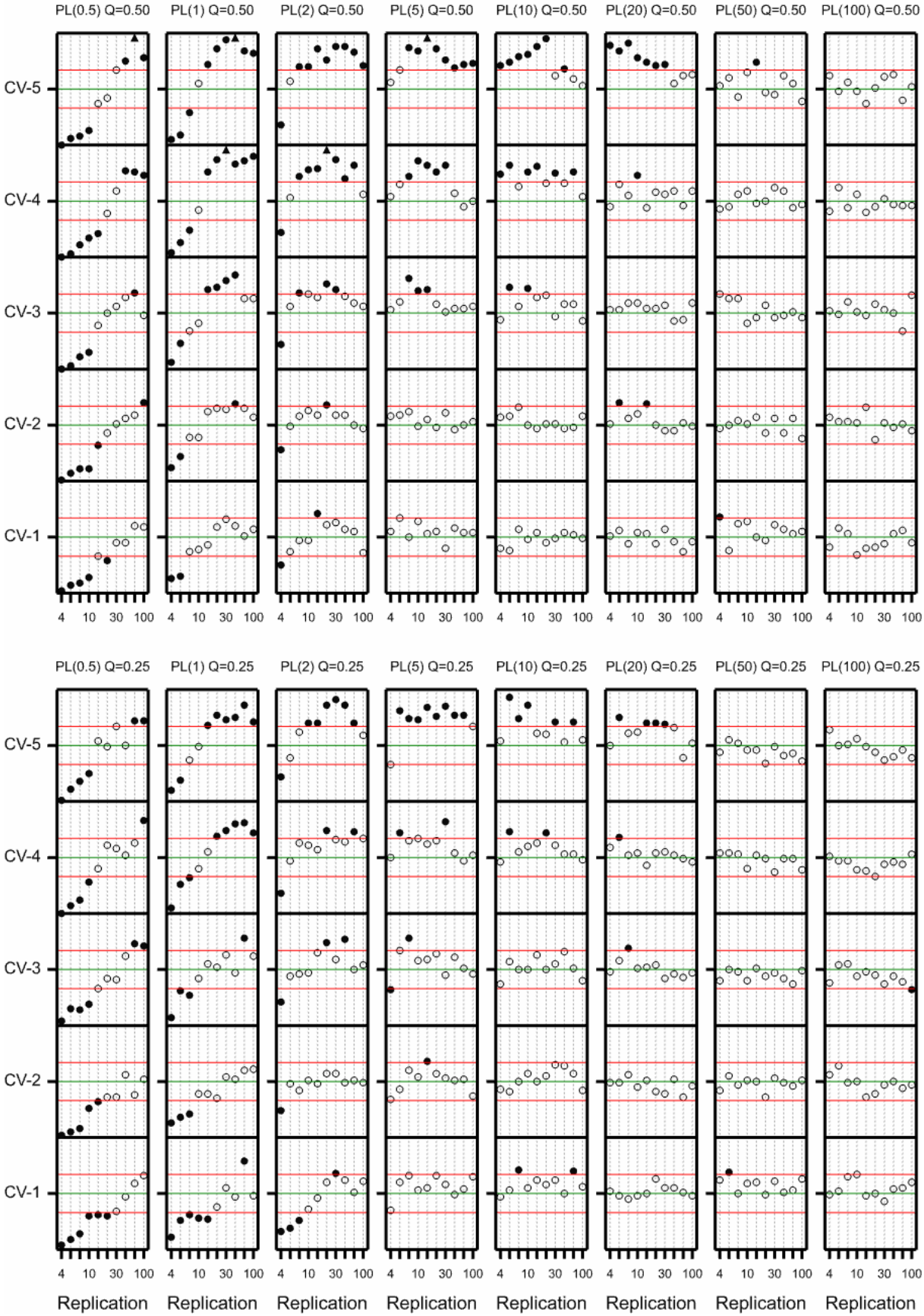
Appendix 1 O8: Coverage of NB interval for Poisson-LogNormal



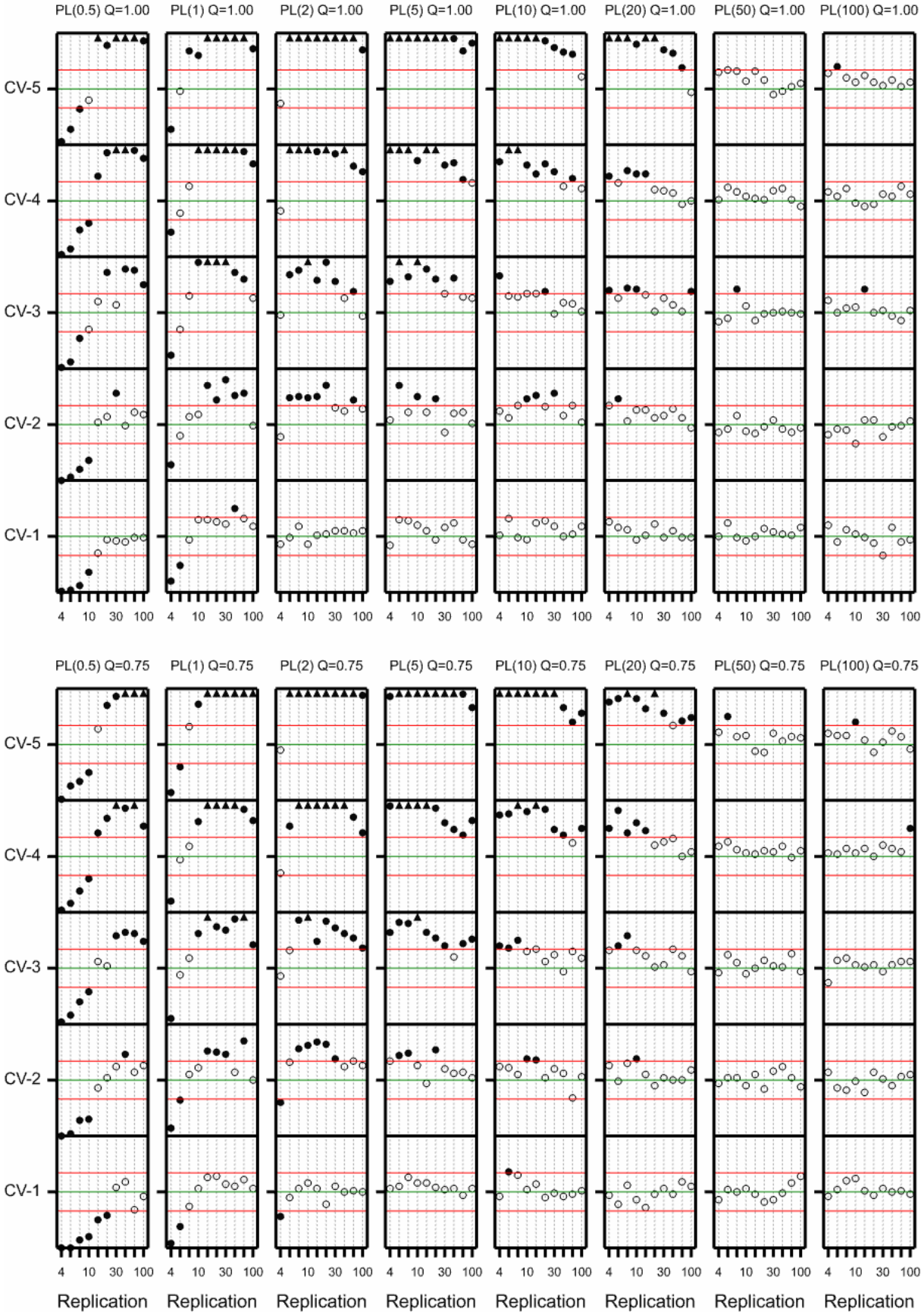
Appendix 1 O9: Coverage of P1 interval for Poisson-LogNormal



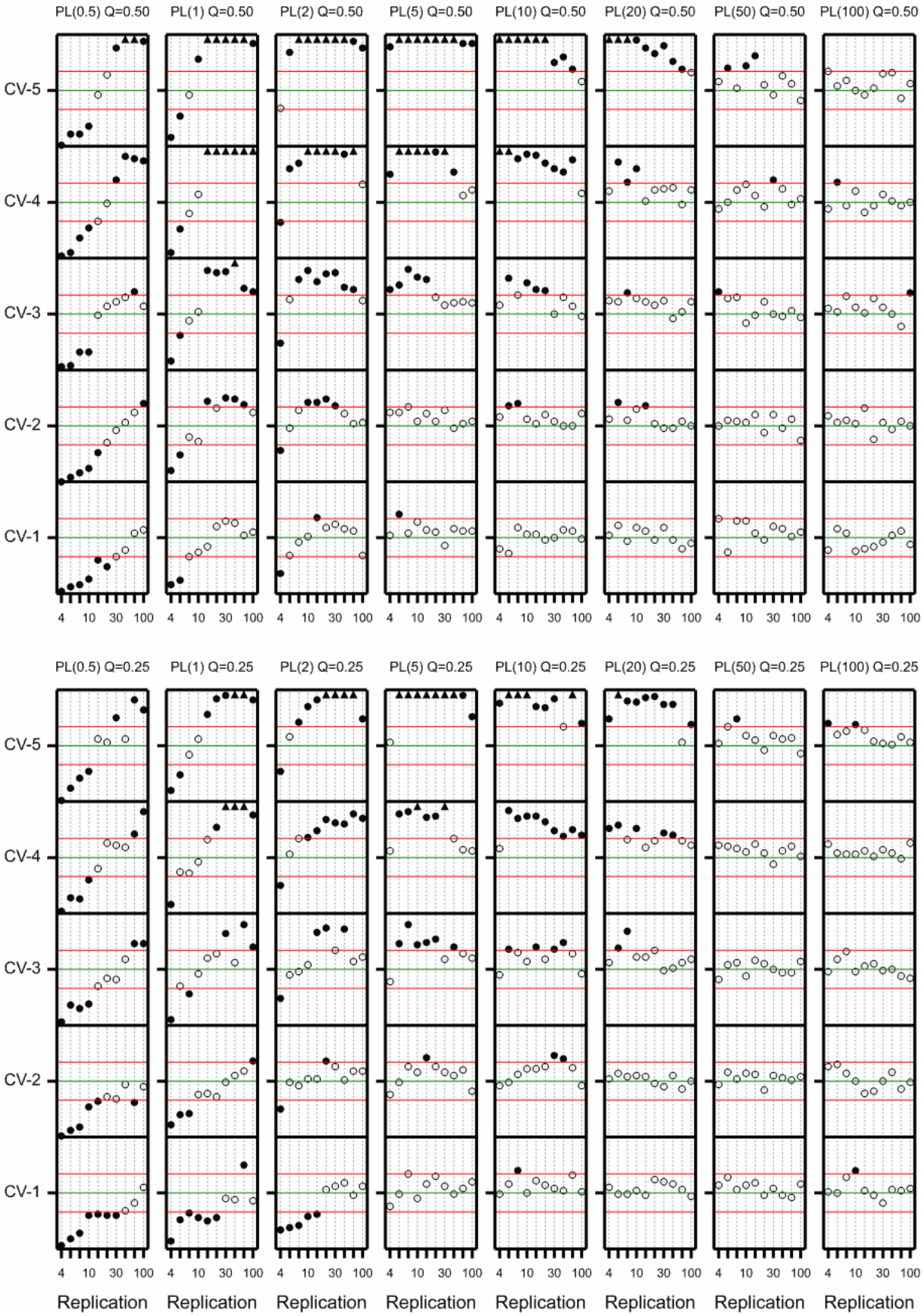
Appendix 1 O10: Coverage of P1 interval for Poisson-LogNormal



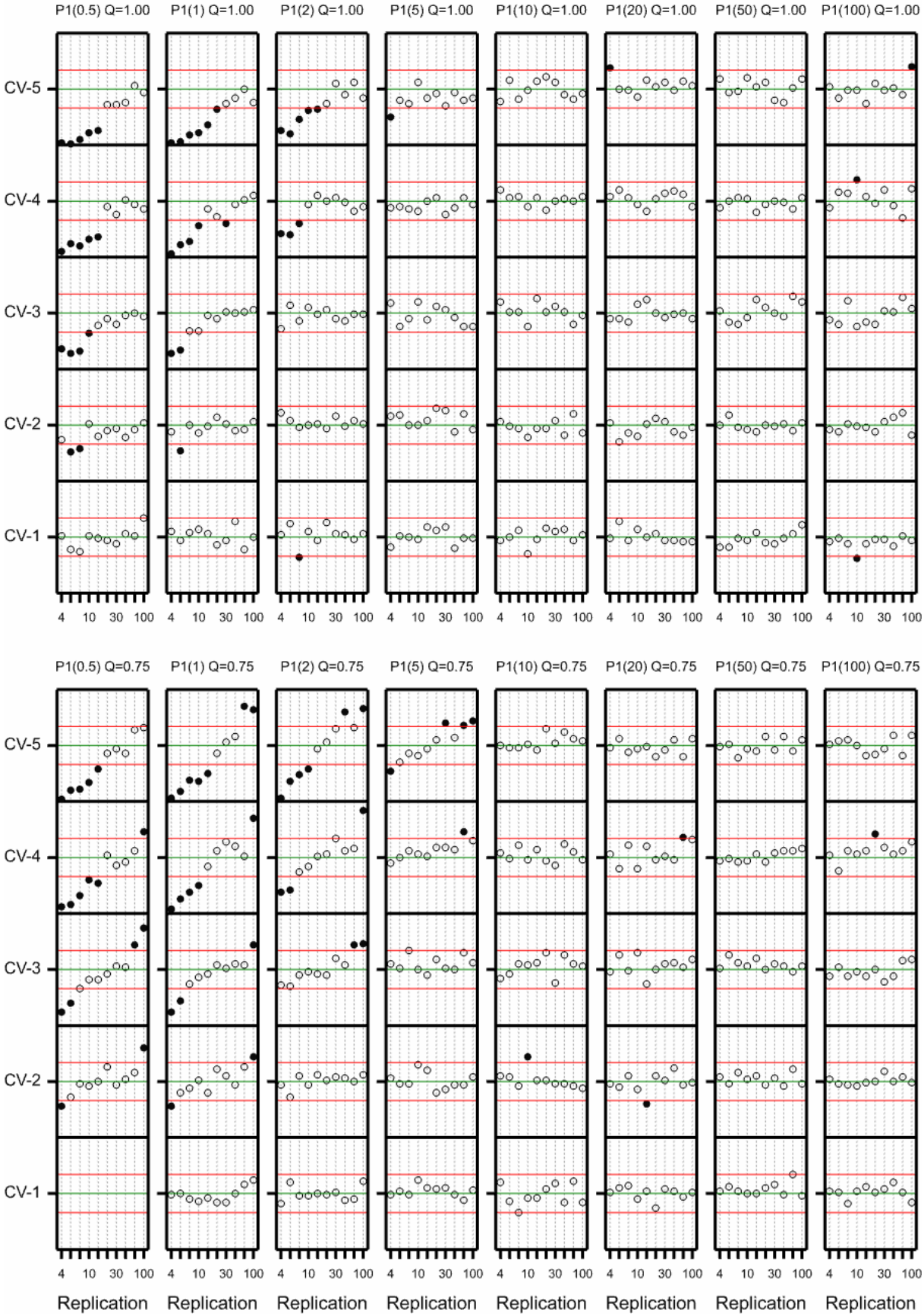
Appendix 1 O11: Coverage of GM interval for Poisson-LogNormal



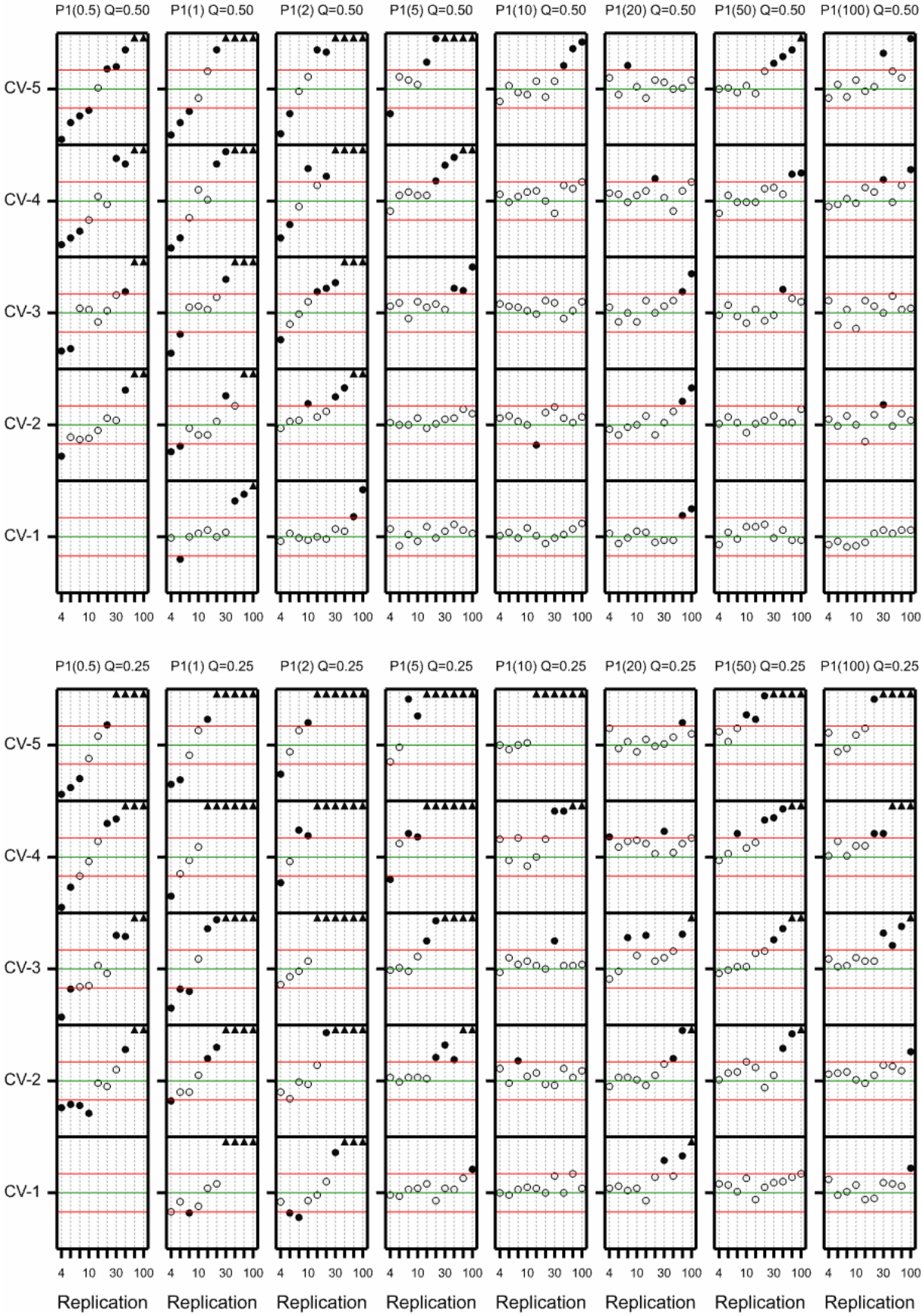
Appendix 1 O12: Coverage of GM interval for Poisson-LogNormal



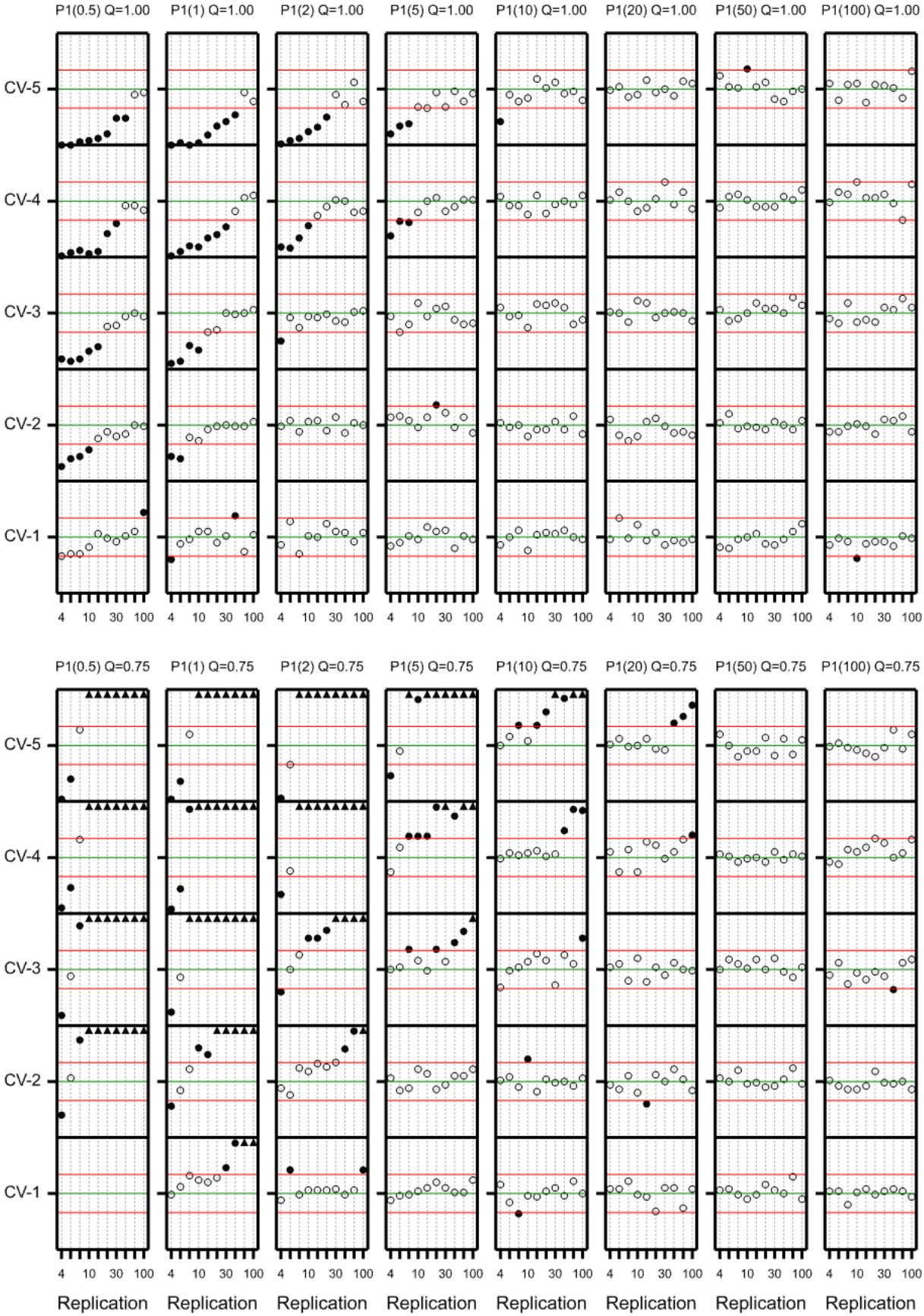
Appendix 1 P1: Coverage of LN interval for Power(1.5)



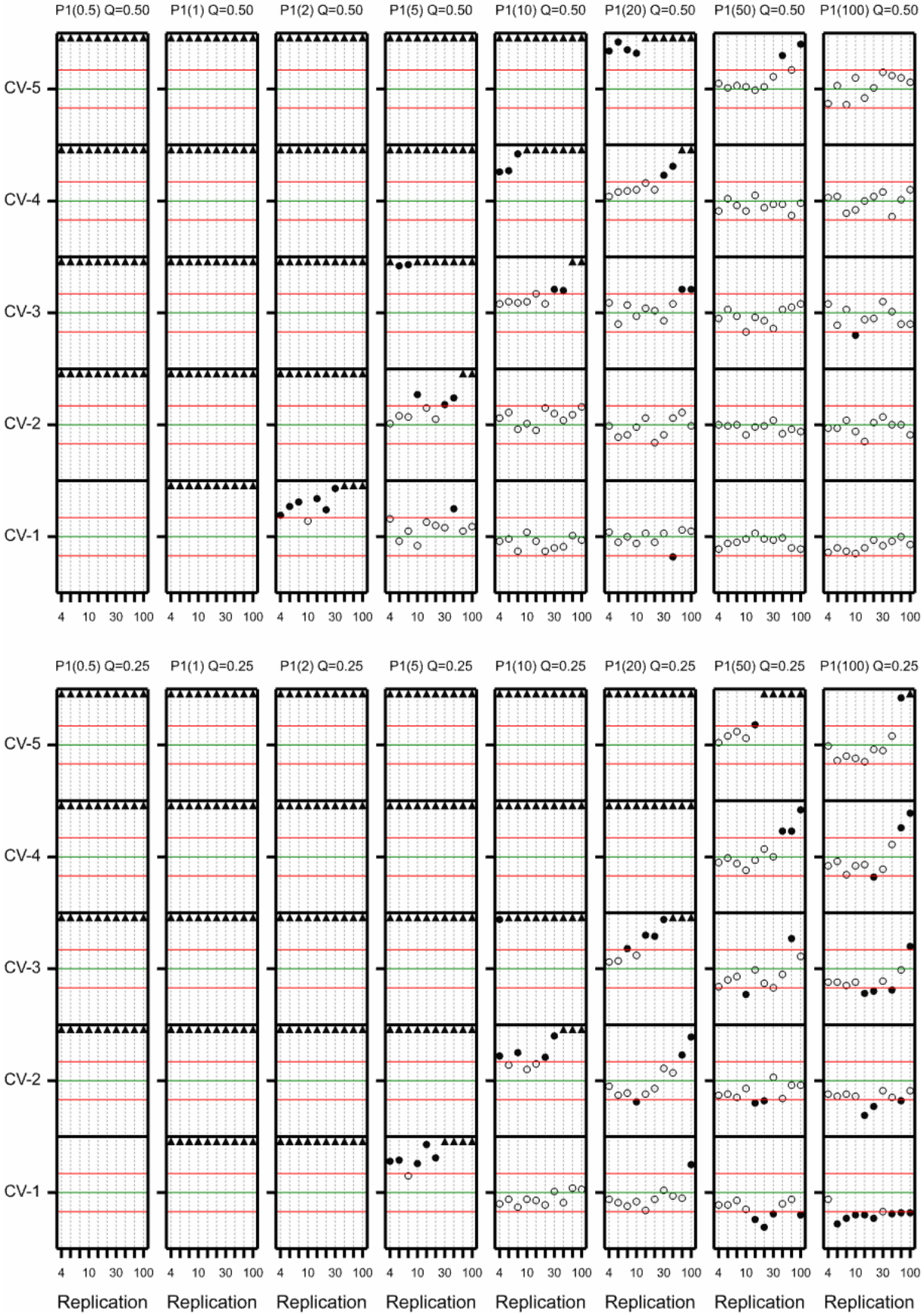
Appendix 1 P2: Coverage of LN interval for Power(1.5)



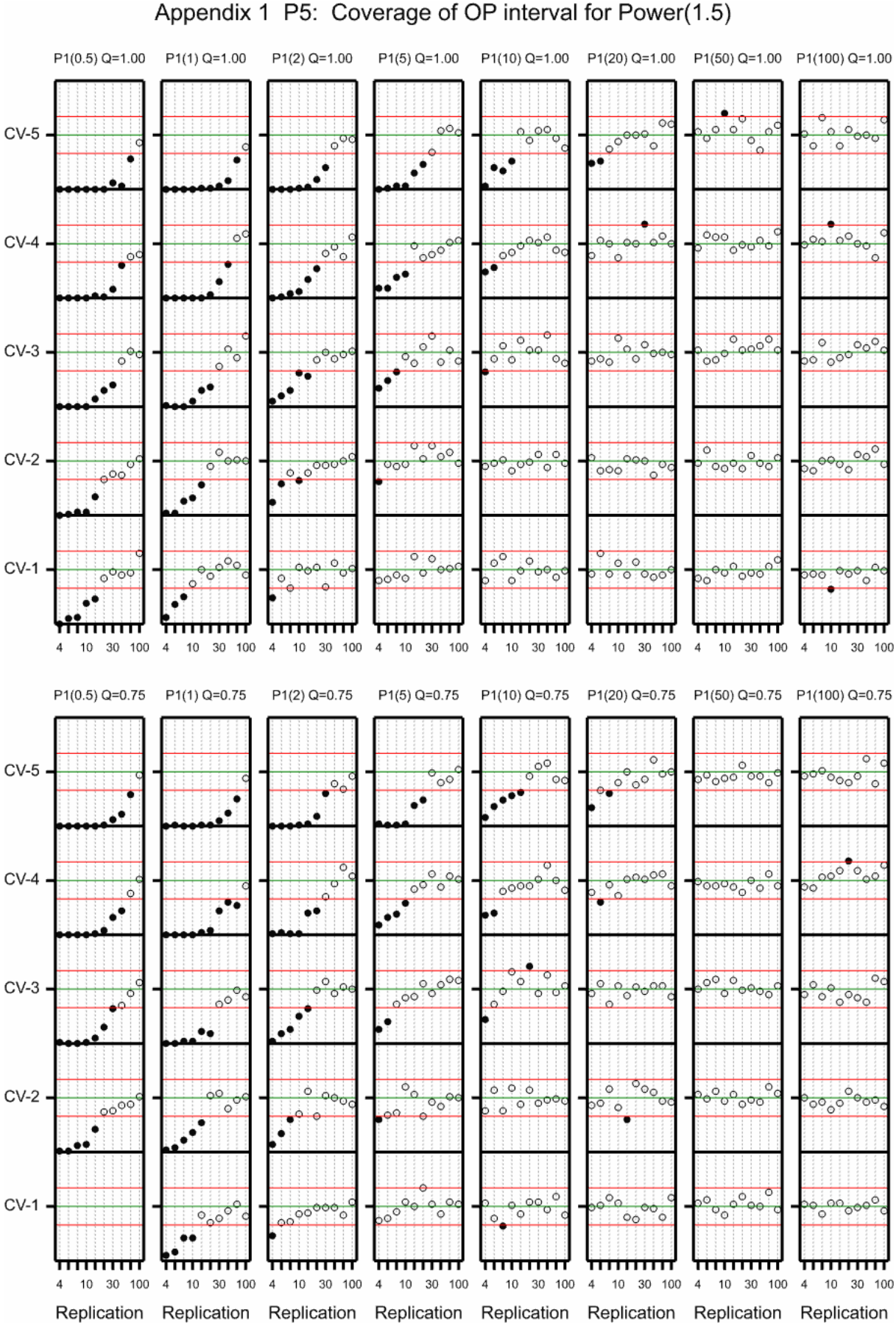
Appendix 1 P3: Coverage of SQ interval for Power(1.5)



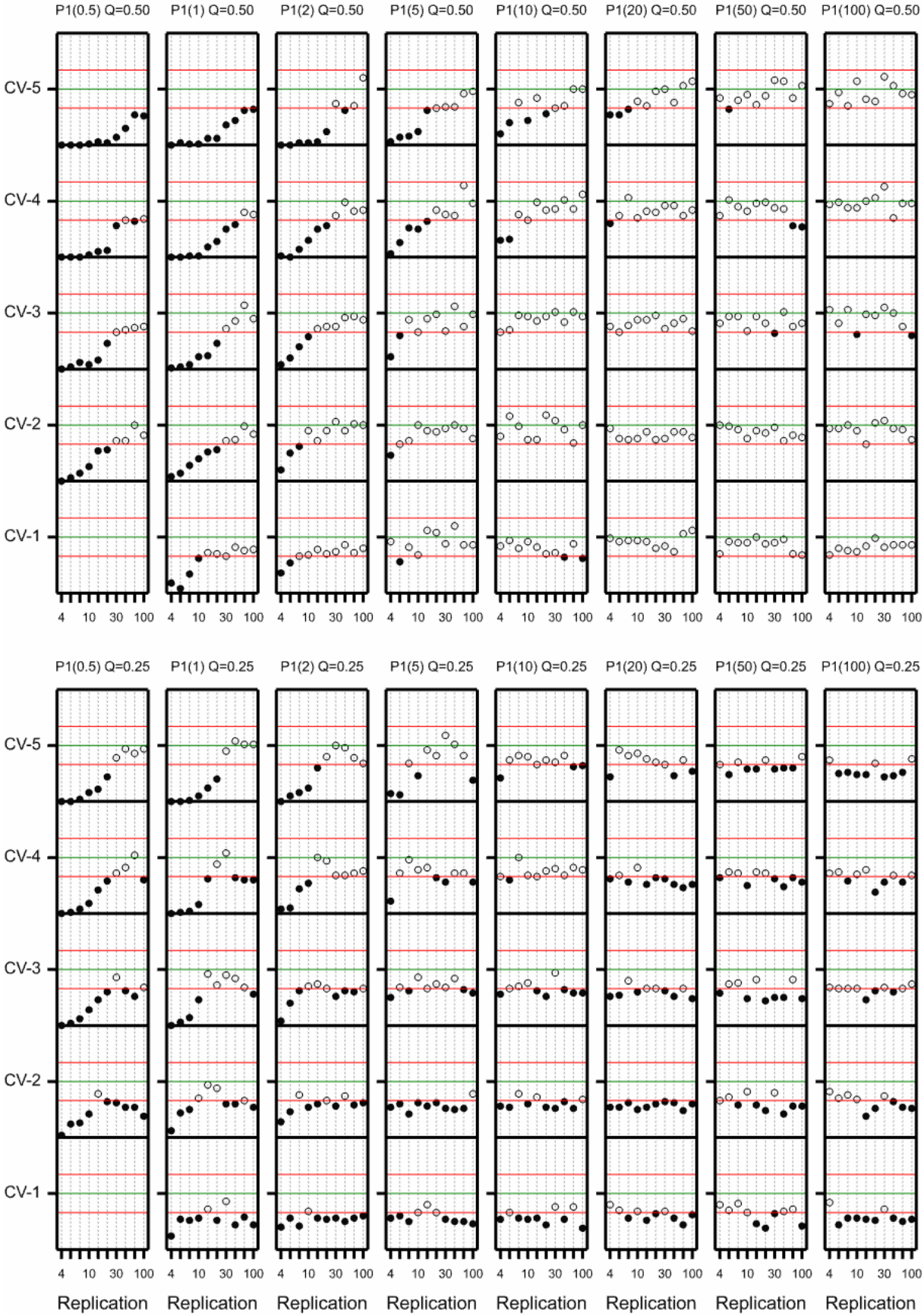
Appendix 1 P4: Coverage of SQ interval for Power(1.5)



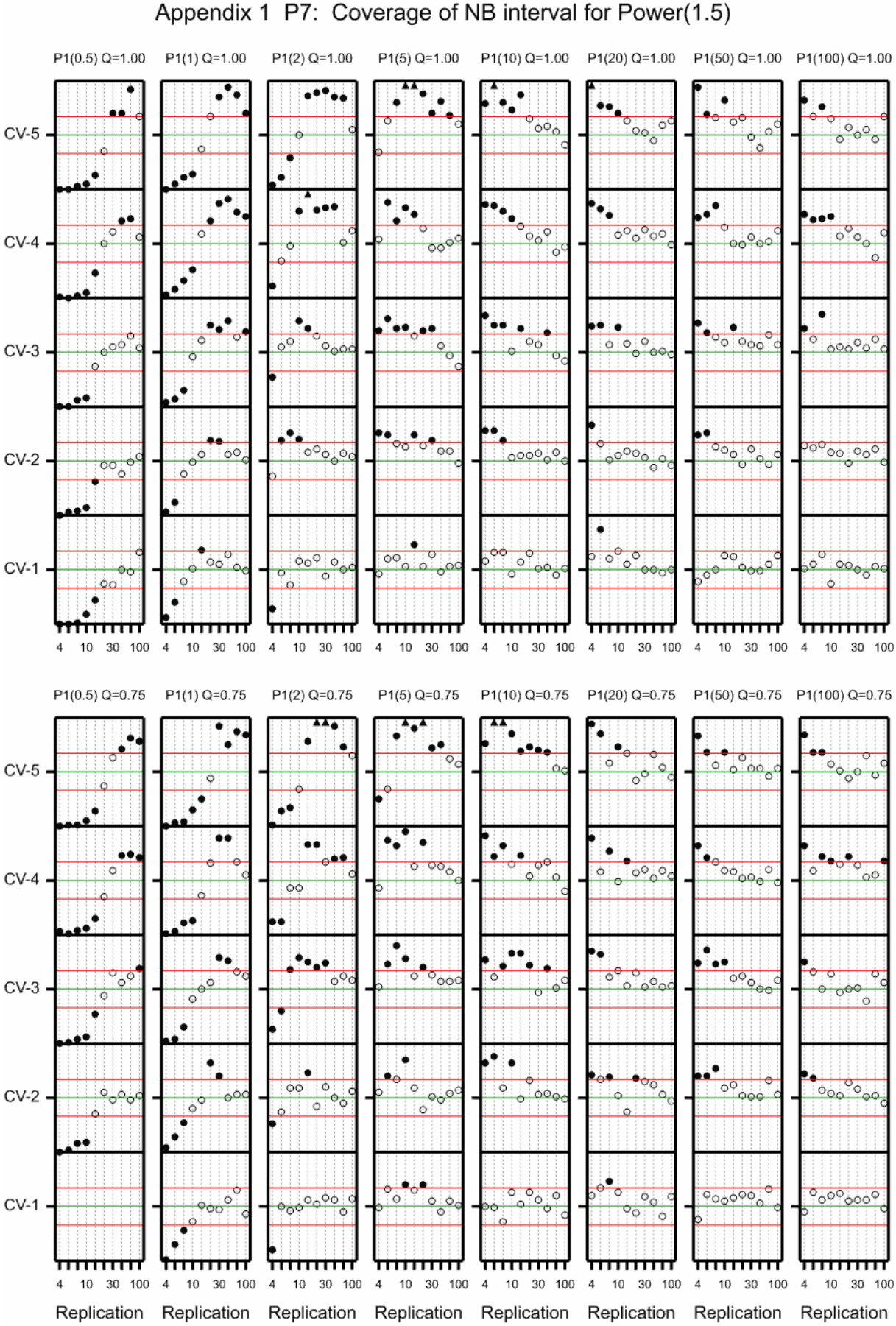
Appendix 1 P5: Coverage of OP interval for Power(1.5)



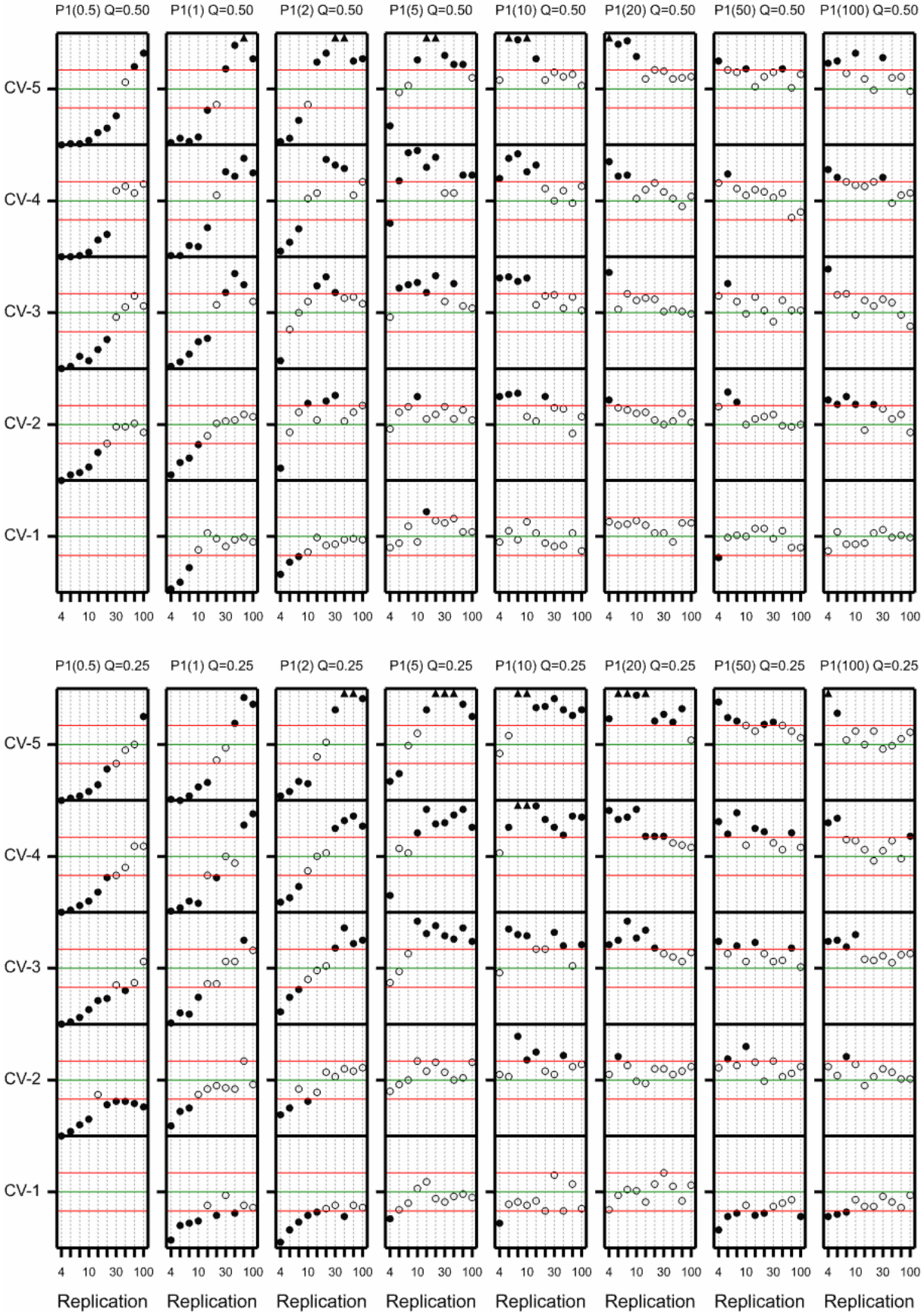
Appendix 1 P6: Coverage of OP interval for Power(1.5)



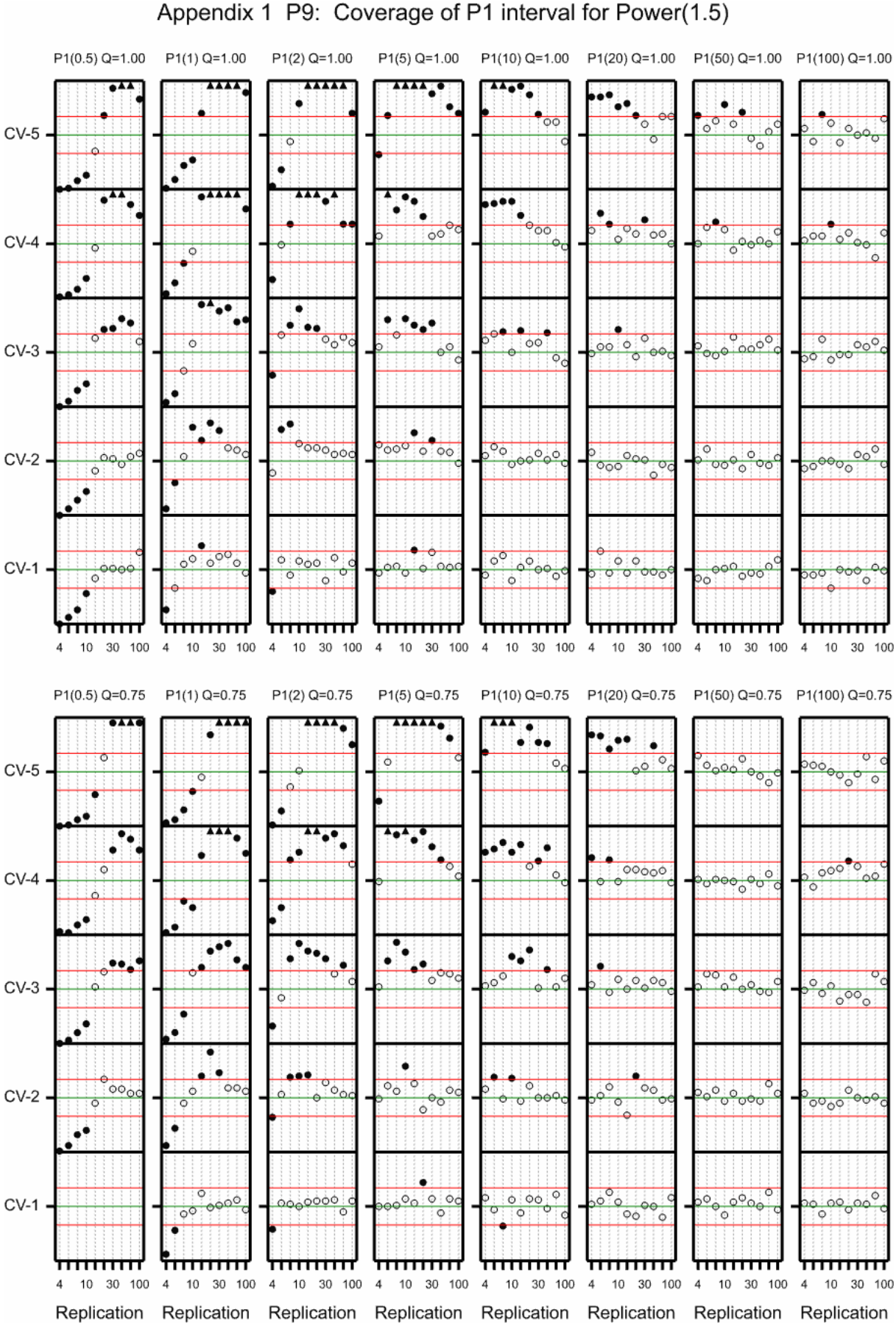
Appendix 1 P7: Coverage of NB interval for Power(1.5)



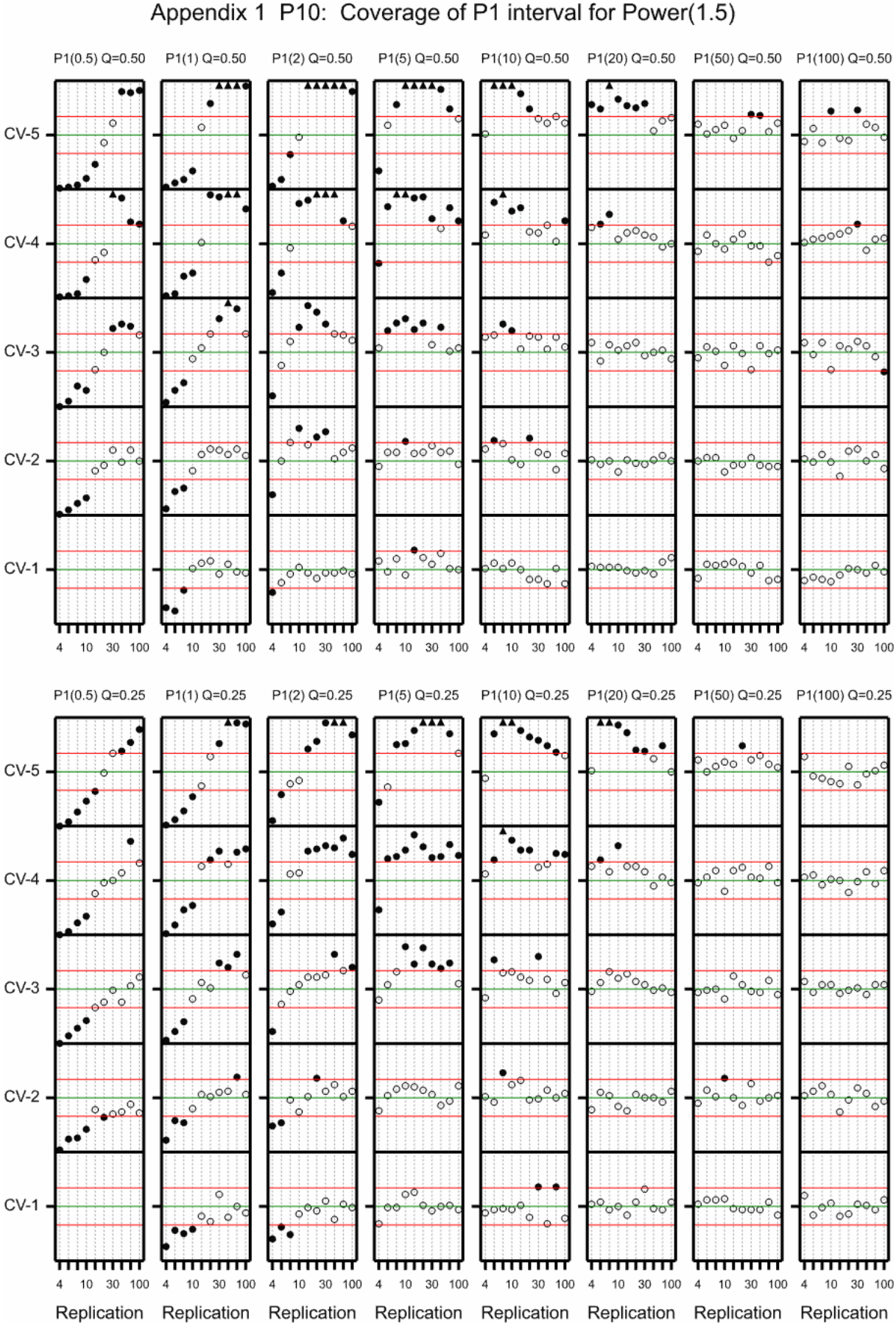
Appendix 1 P8: Coverage of NB interval for Power(1.5)



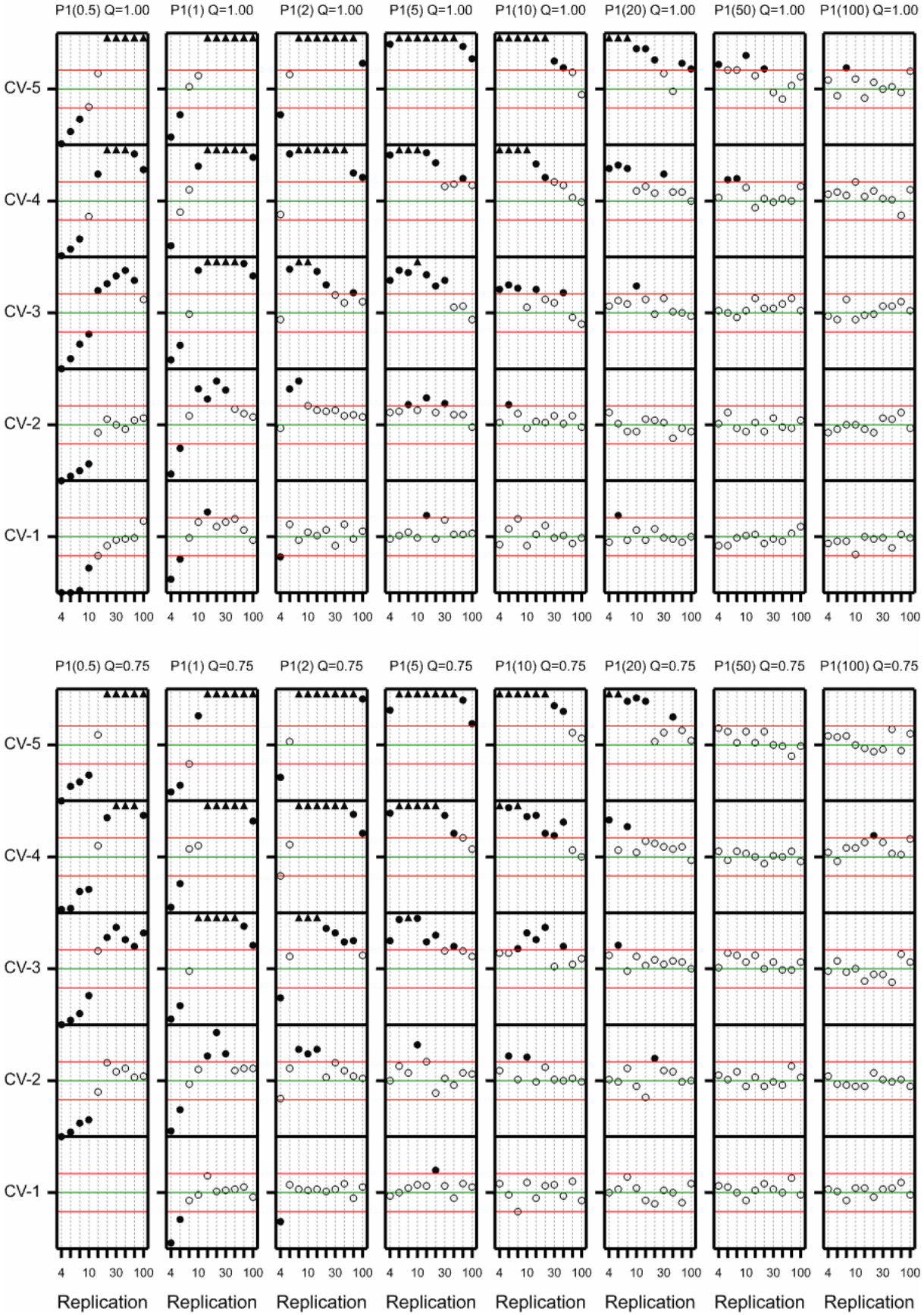
Appendix 1 P9: Coverage of P1 interval for Power(1.5)



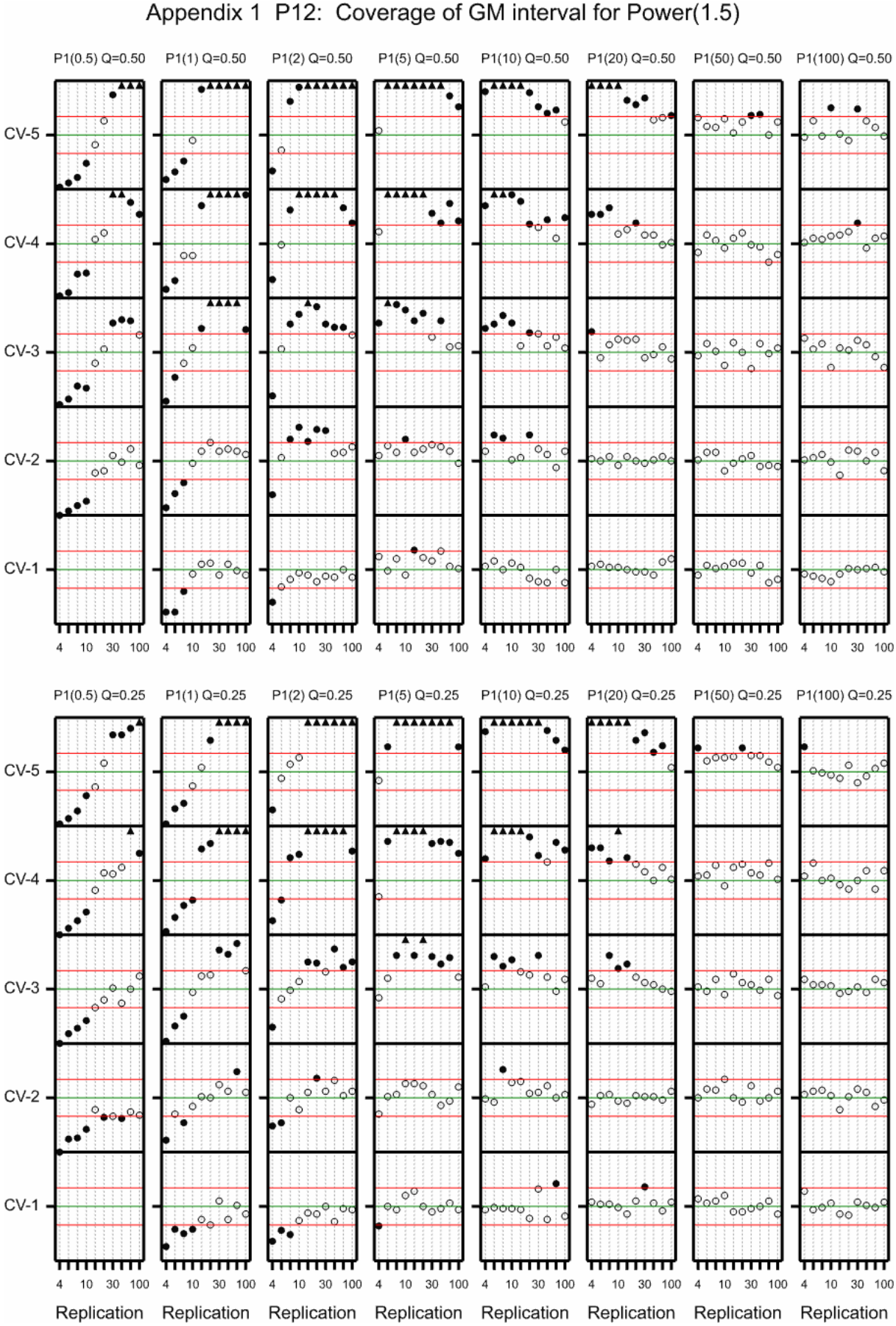
Appendix 1 P10: Coverage of P1 interval for Power(1.5)



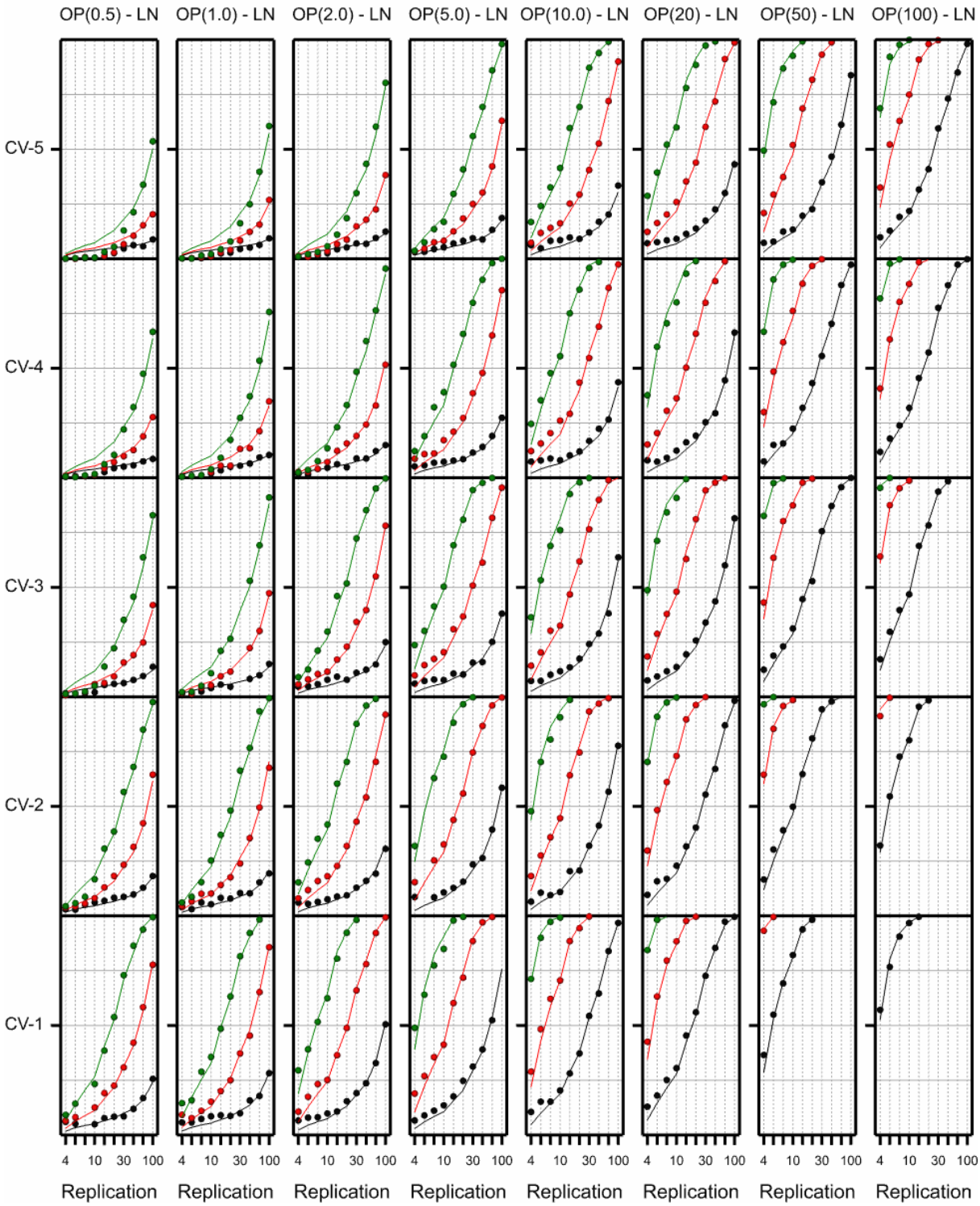
Appendix 1 P11: Coverage of GM interval for Power(1.5)



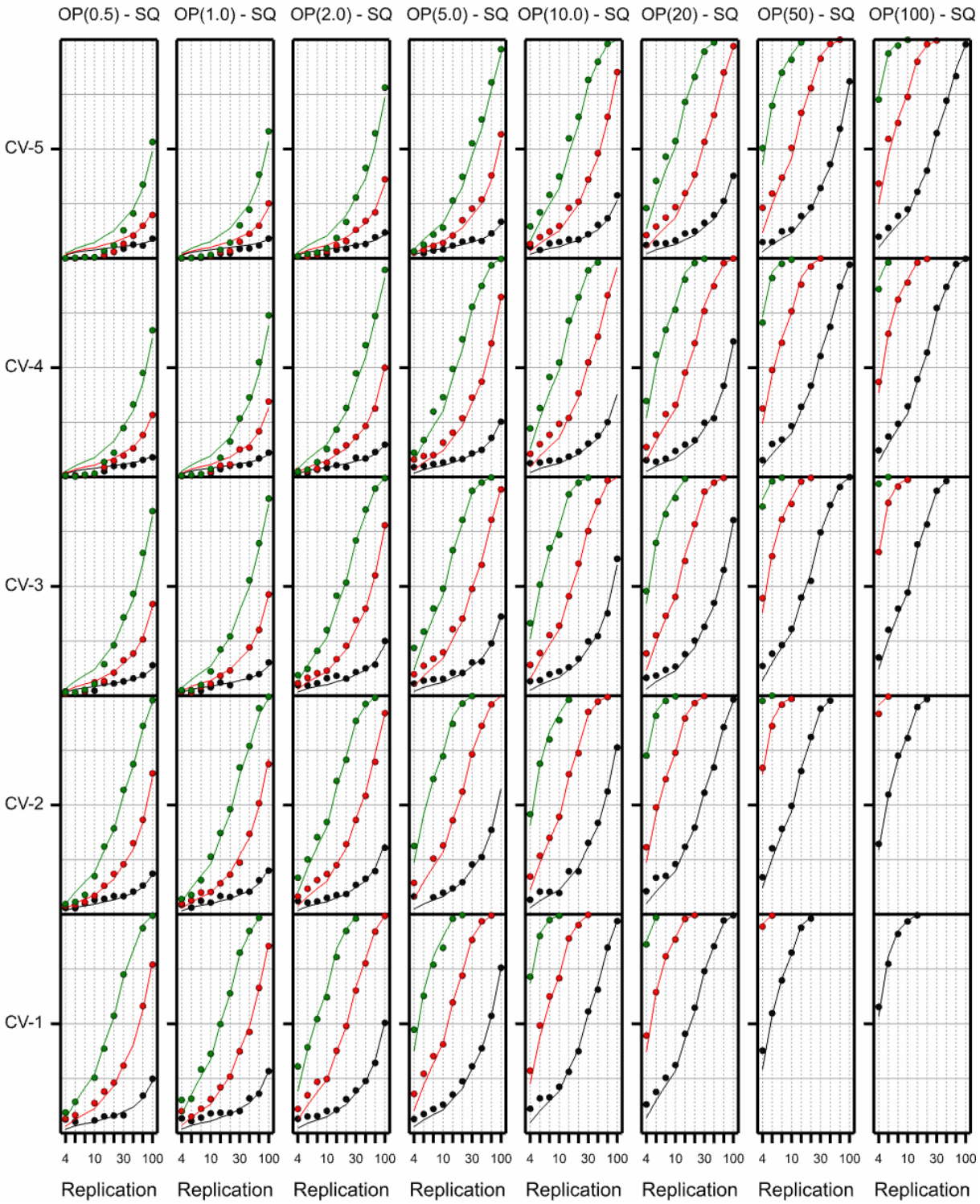
Appendix 1 P12: Coverage of GM interval for Power(1.5)



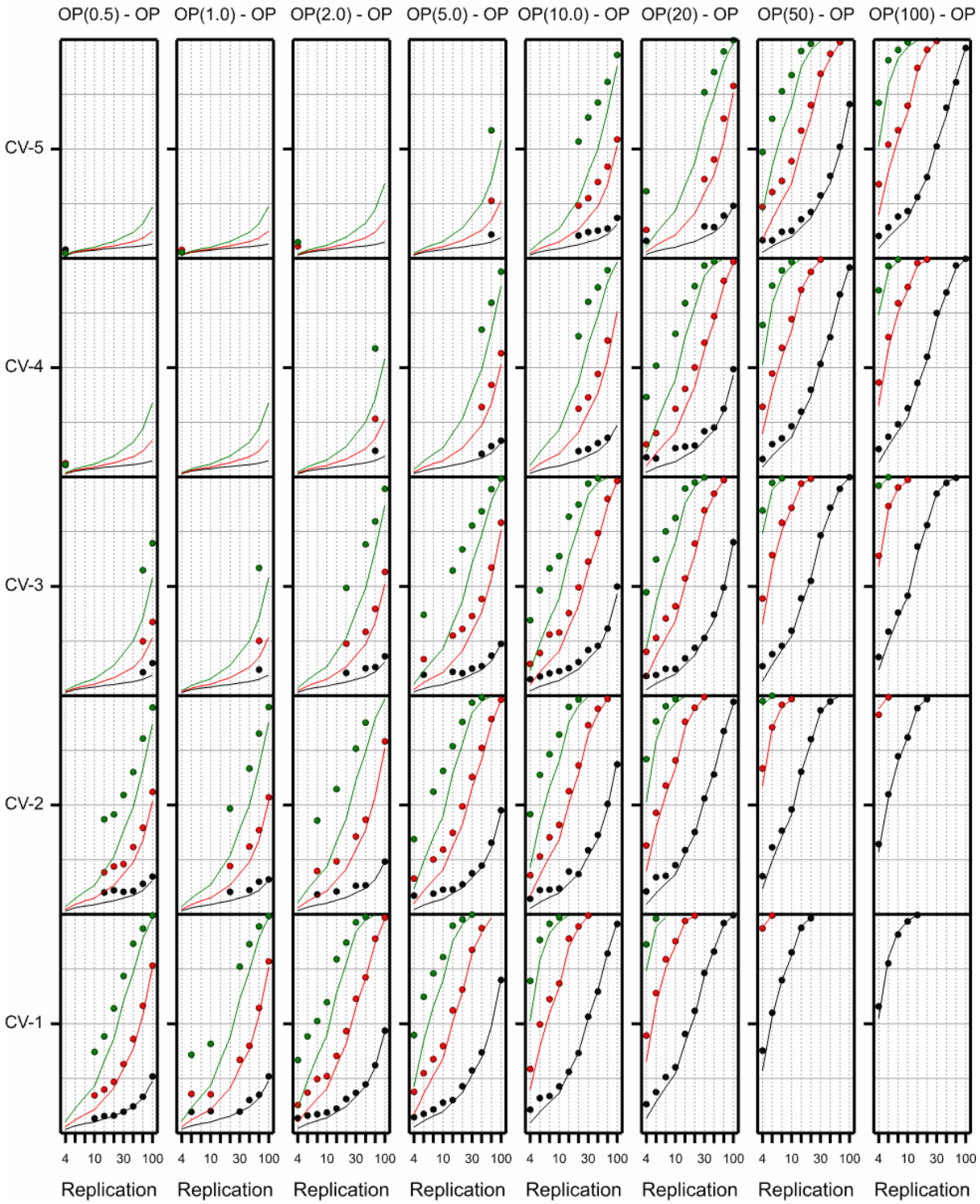
Appendix 1 Q1: Power of LN & Lyles difference test for Overdispersed Poisson



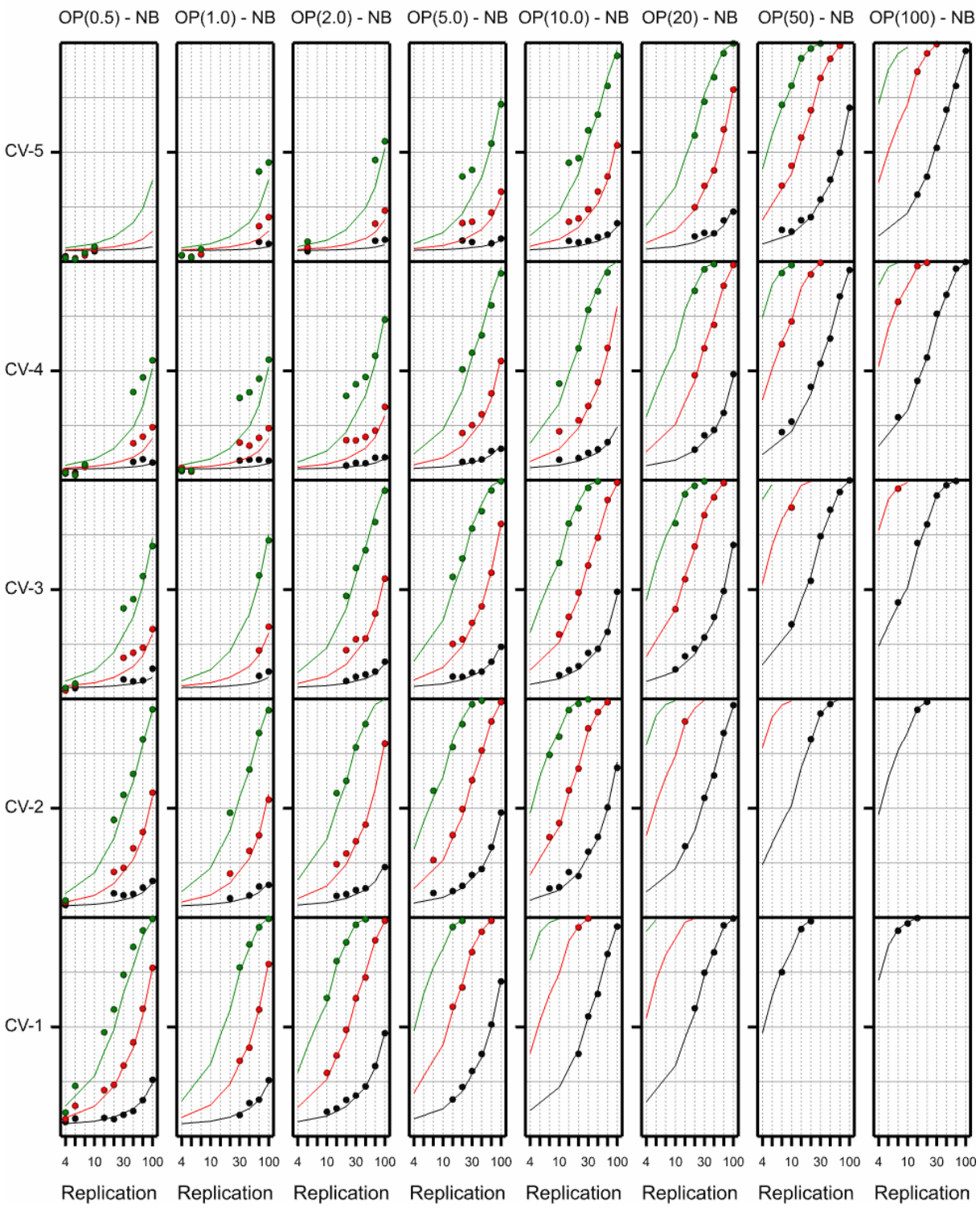
Appendix 1 Q2: Power of SQ & Lyles difference test for Overdispersed Poisson



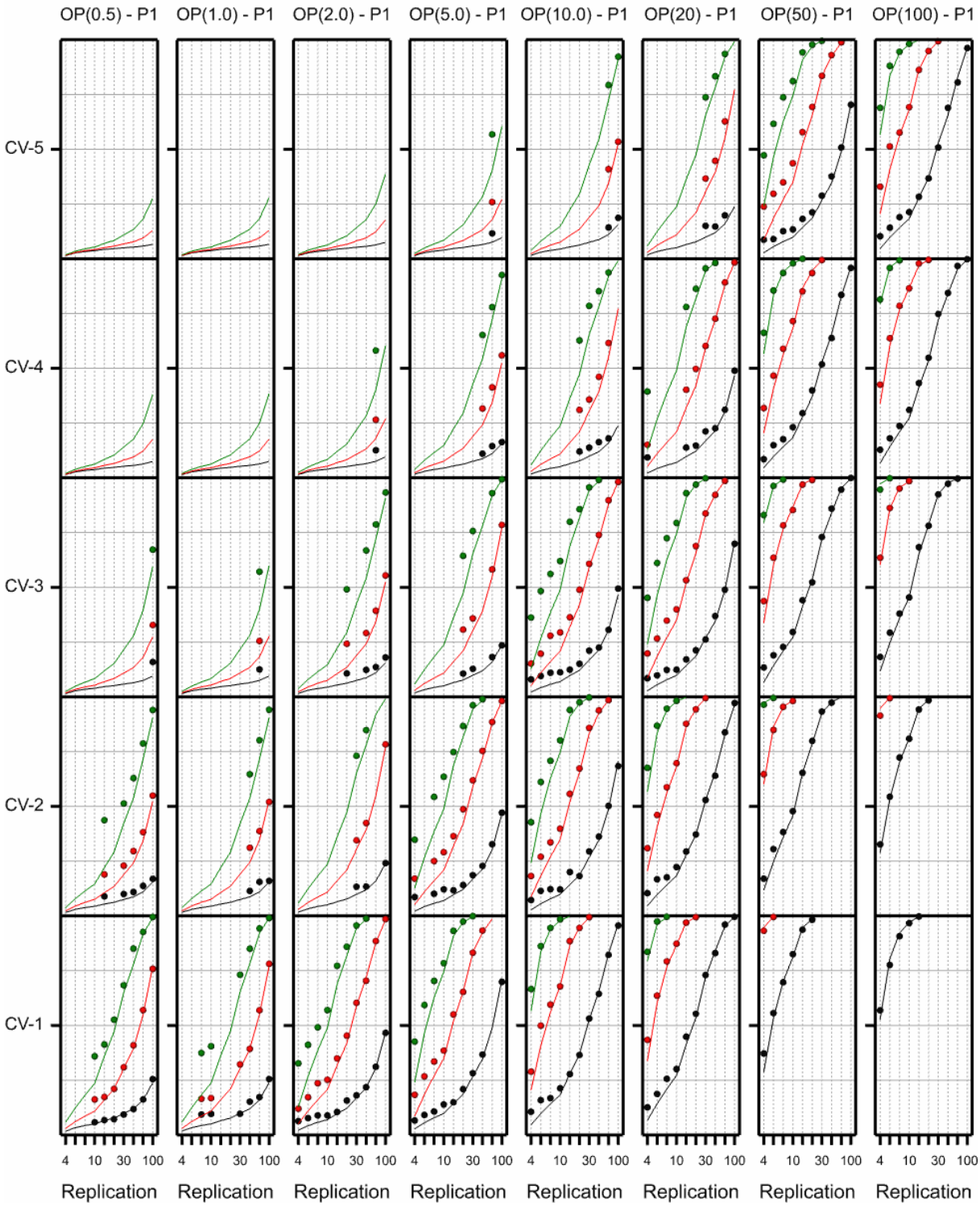
Appendix 1 Q3: Power of OP & Lyles difference test for Overdispersed Poisson



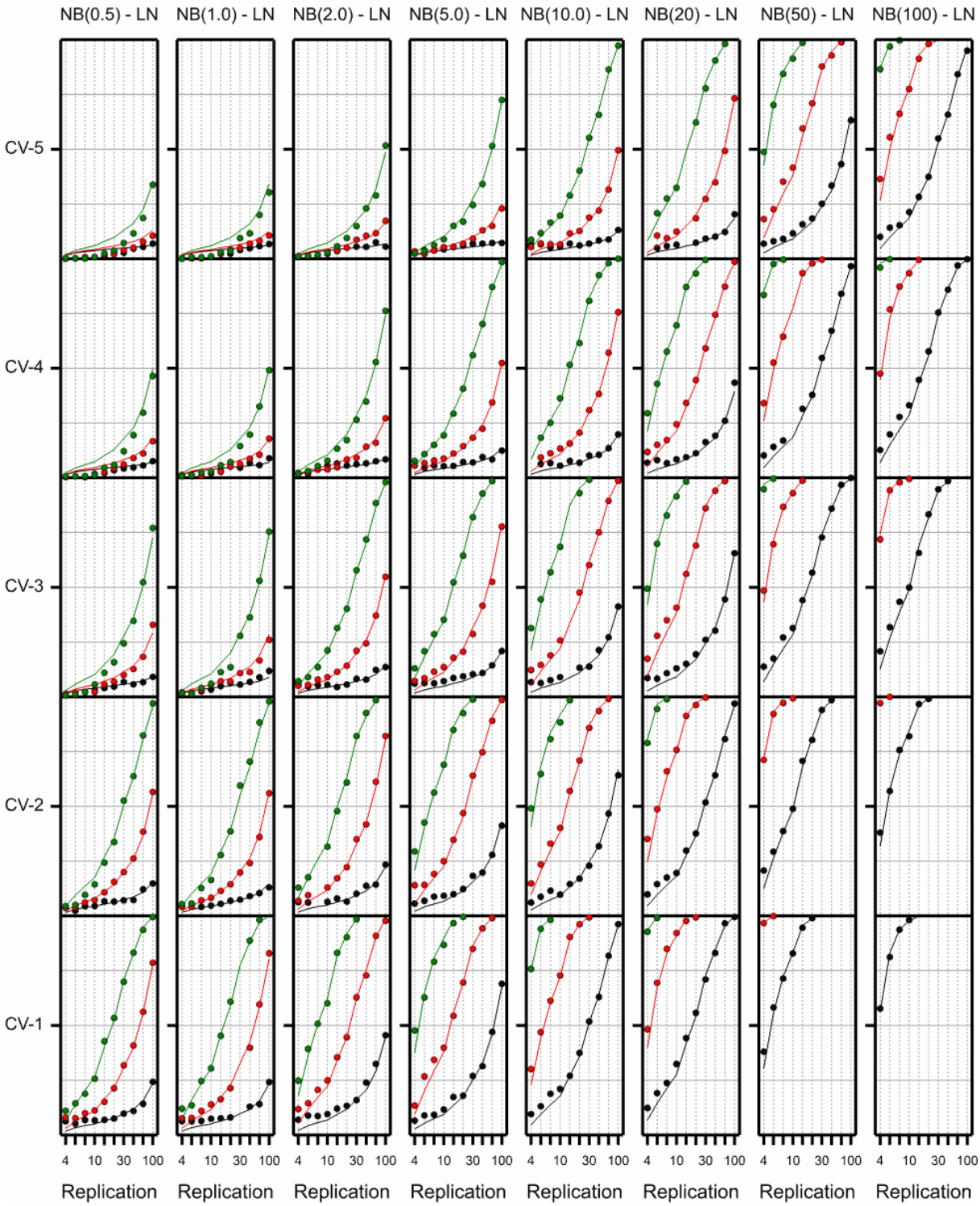
Appendix 1 Q4: Power of NB & Lyles difference test for Overdispersed Poisson



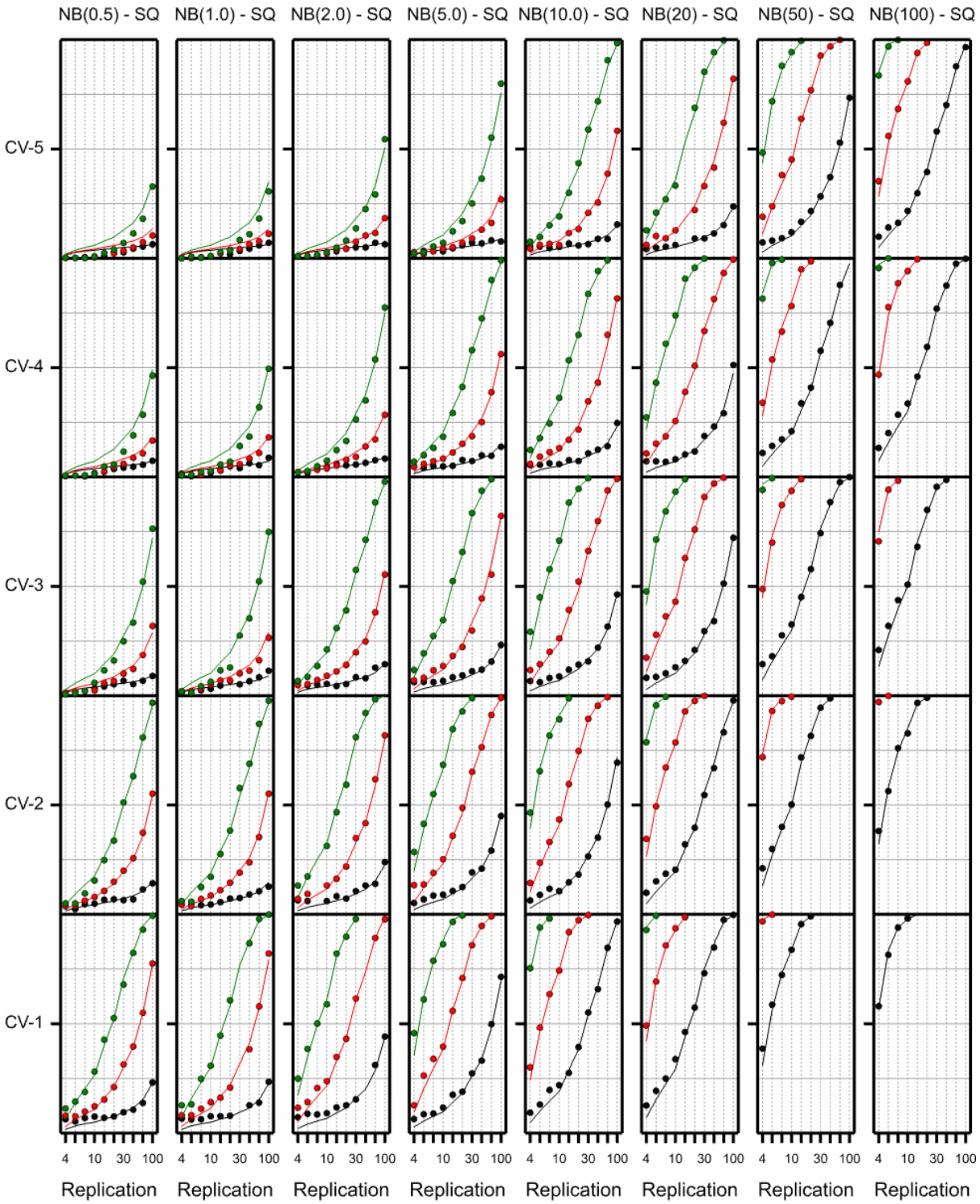
Appendix 1 Q5: Power of P1 & Lyles difference test for Overdispersed Poisson



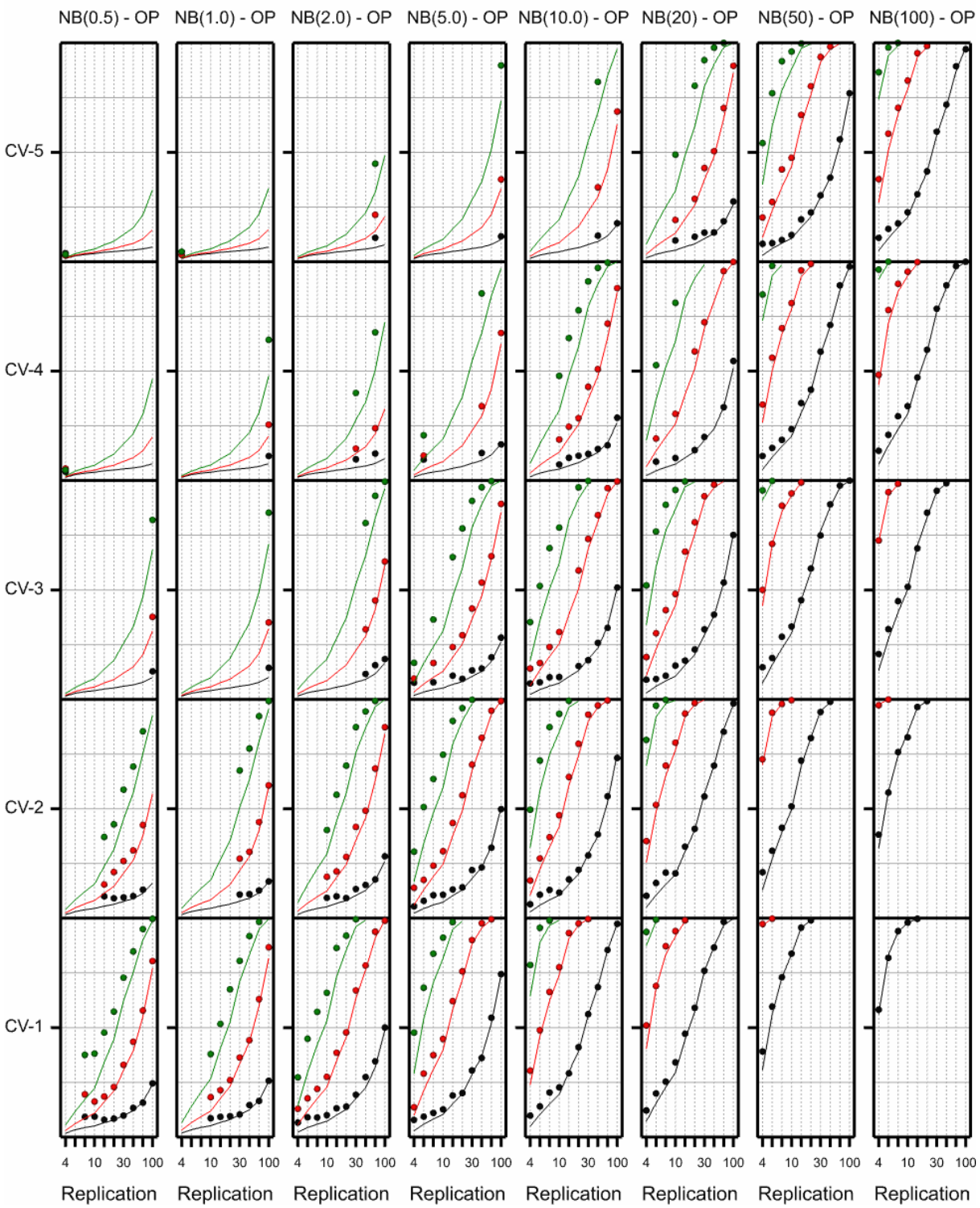
Appendix 1 R1: Power of LN & Lyles difference test for Negative Binomial



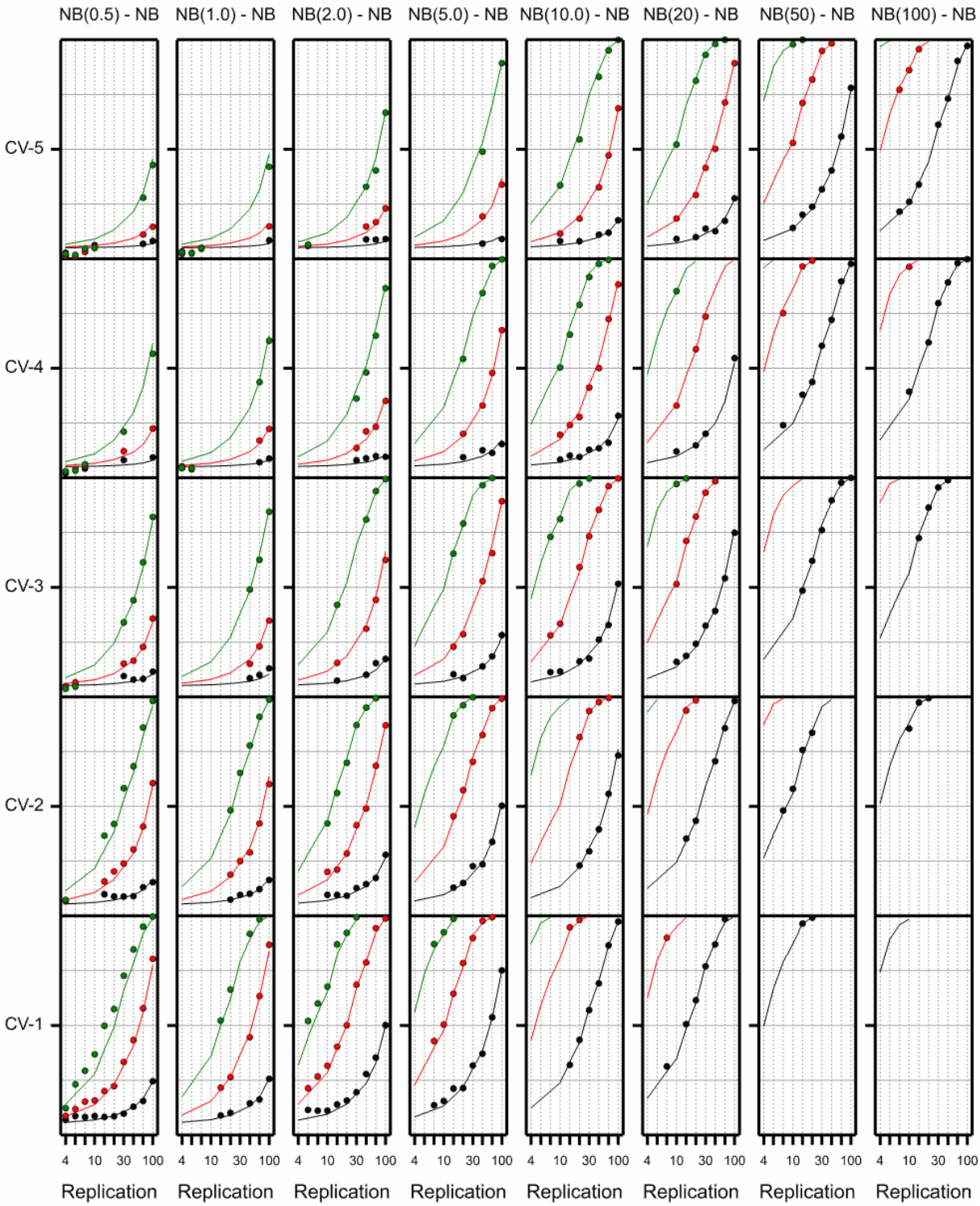
Appendix 1 R2: Power of SQ & Lyles difference test for Negative Binomial



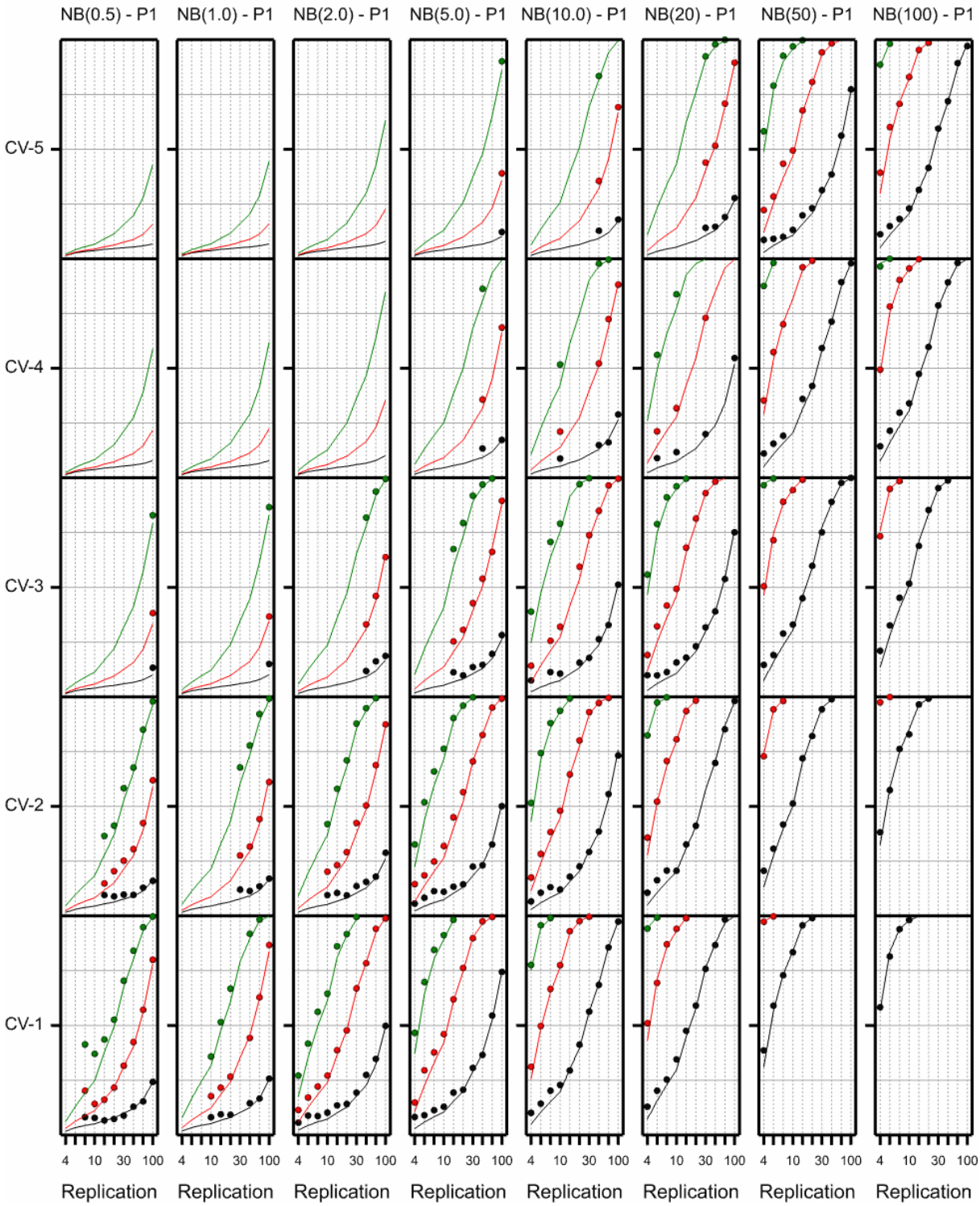
Appendix 1 R3: Power of OP & Lyles difference test for Negative Binomial



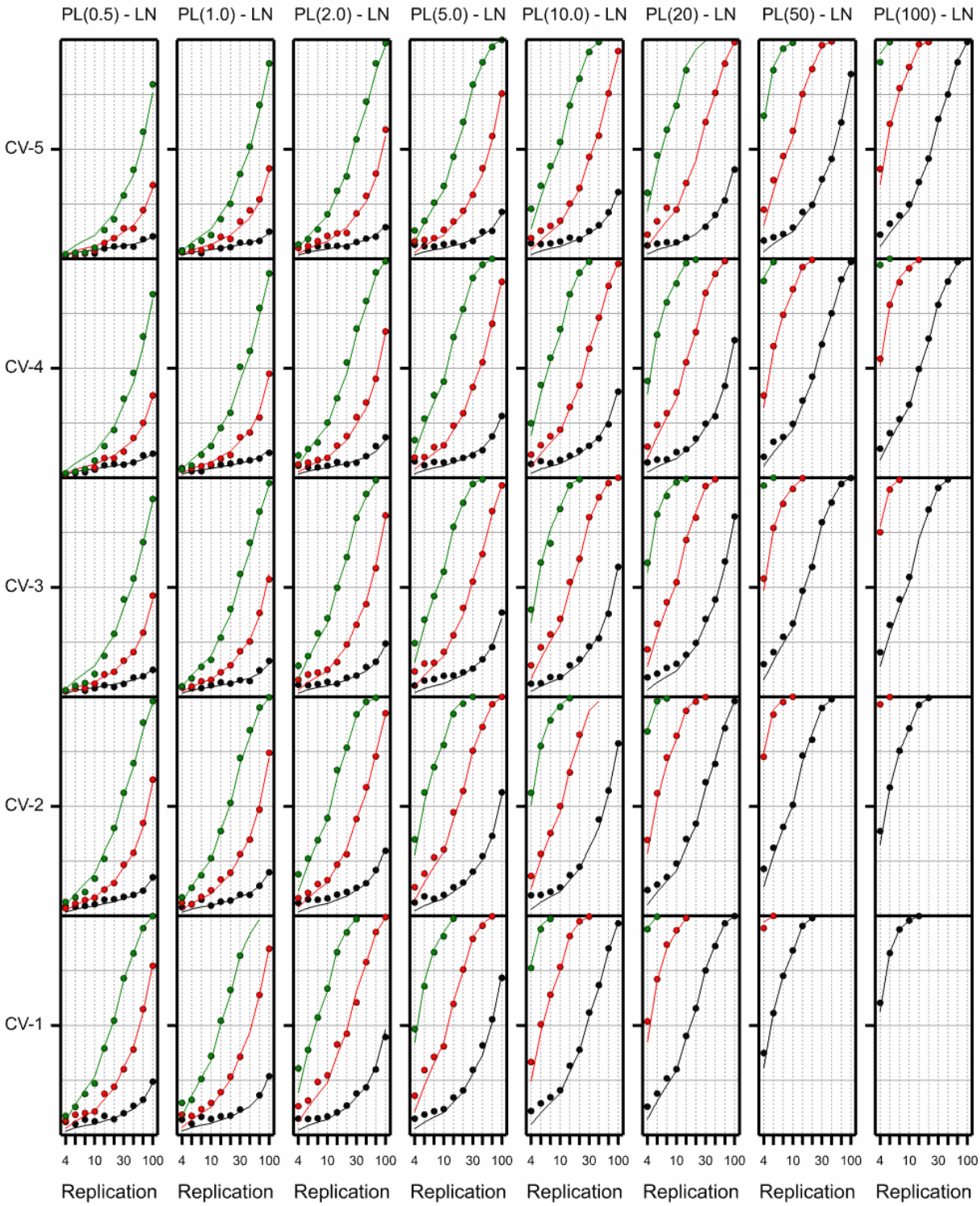
Appendix 1 R4: Power of NB & Lyles difference test for Negative Binomial



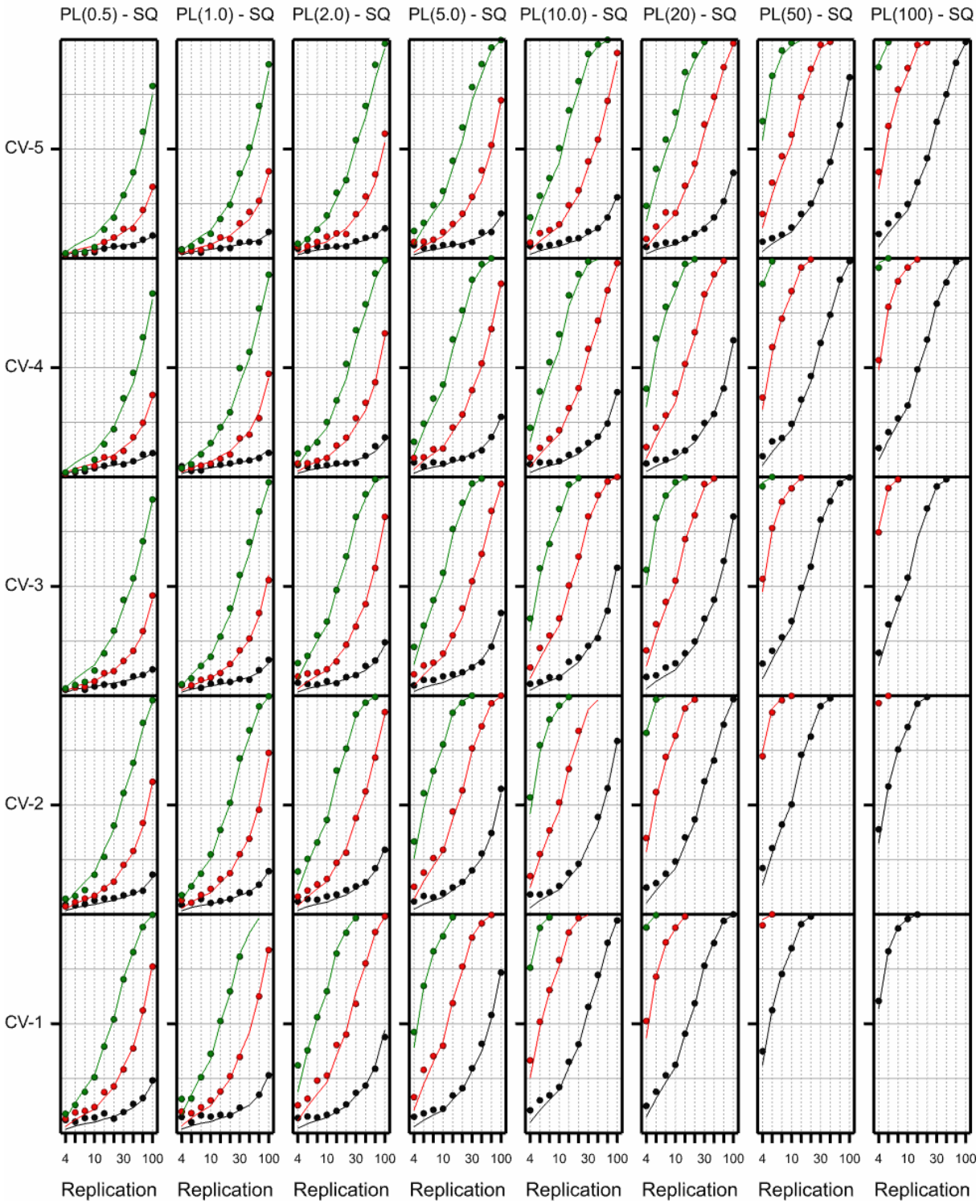
Appendix 1 R5: Power of P1 & Lyles difference test for Negative Binomial



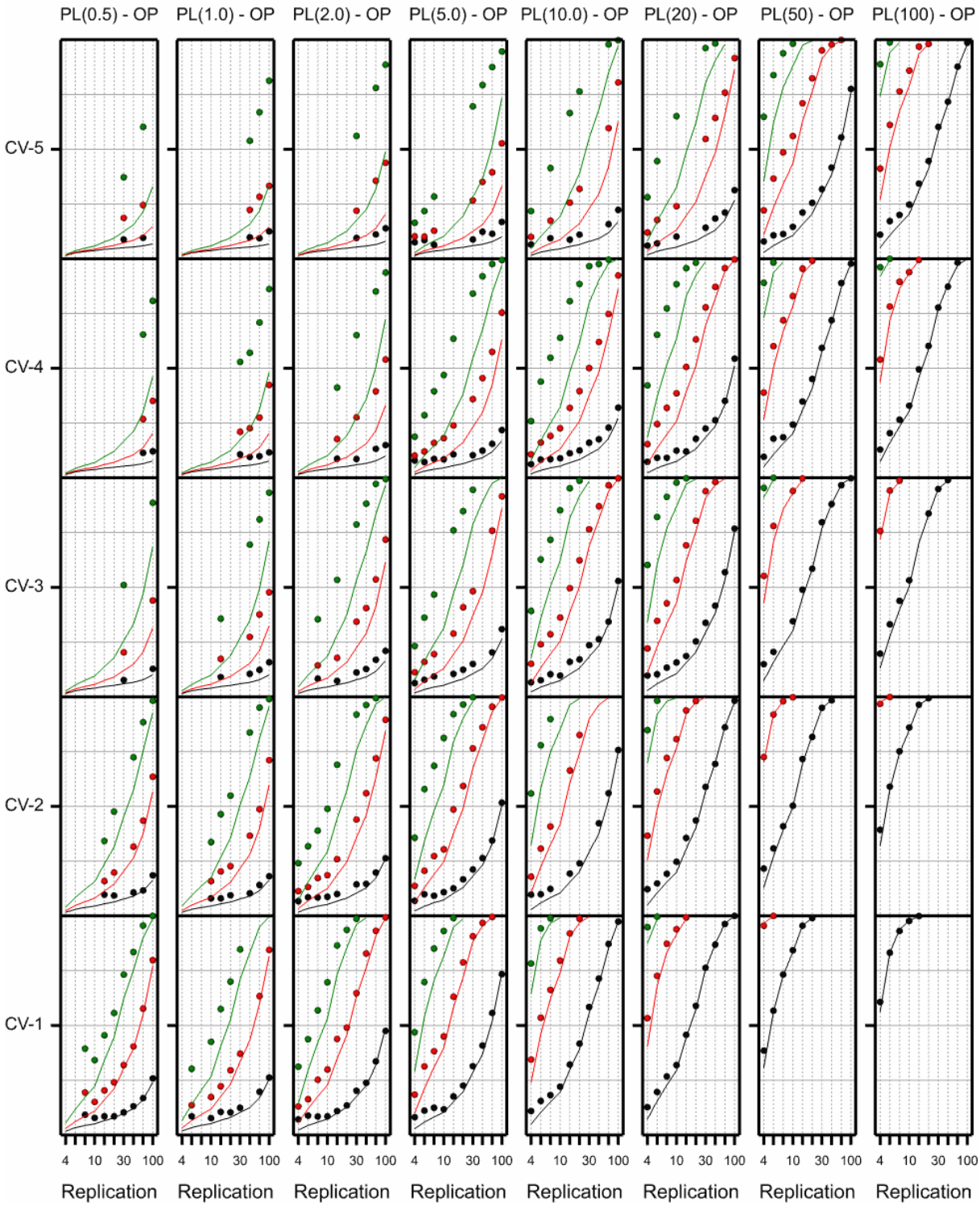
Appendix 1 S1: Power of LN & Lyles difference test for Poisson-LogNormal



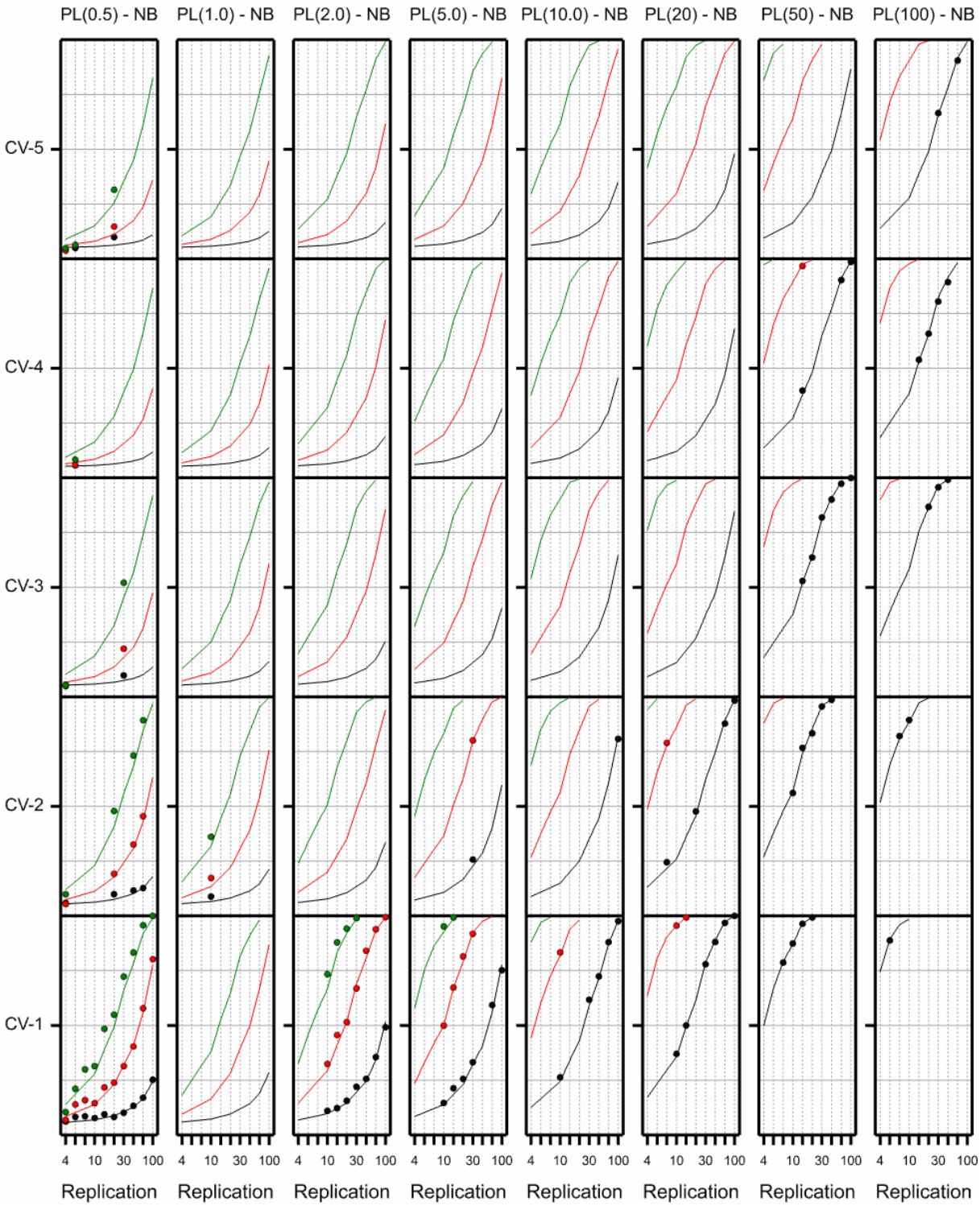
Appendix 1 S2: Power of SQ & Lyles difference test for Poisson-LogNormal



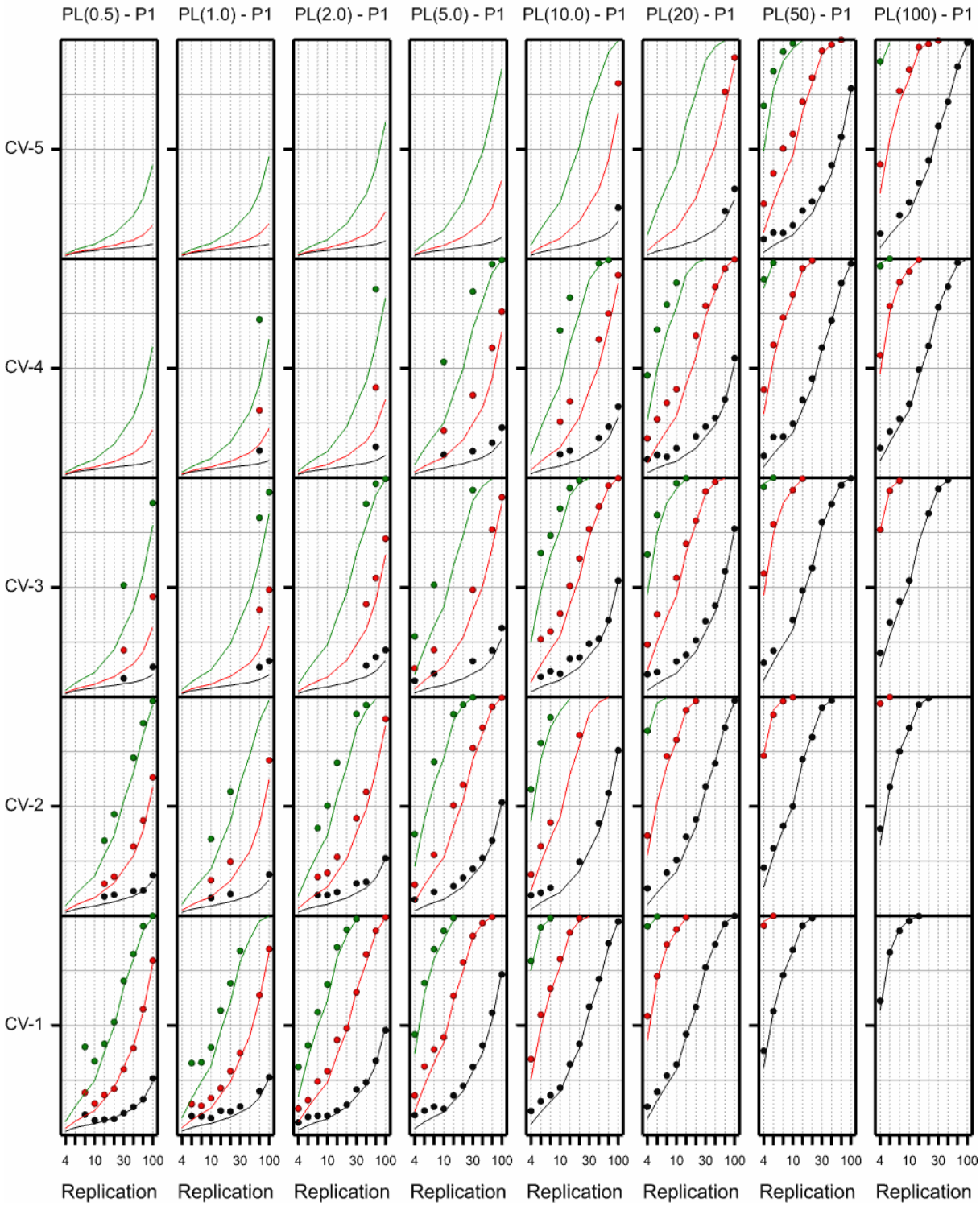
Appendix 1 S3: Power of OP & Lyles difference test for Poisson-LogNormal



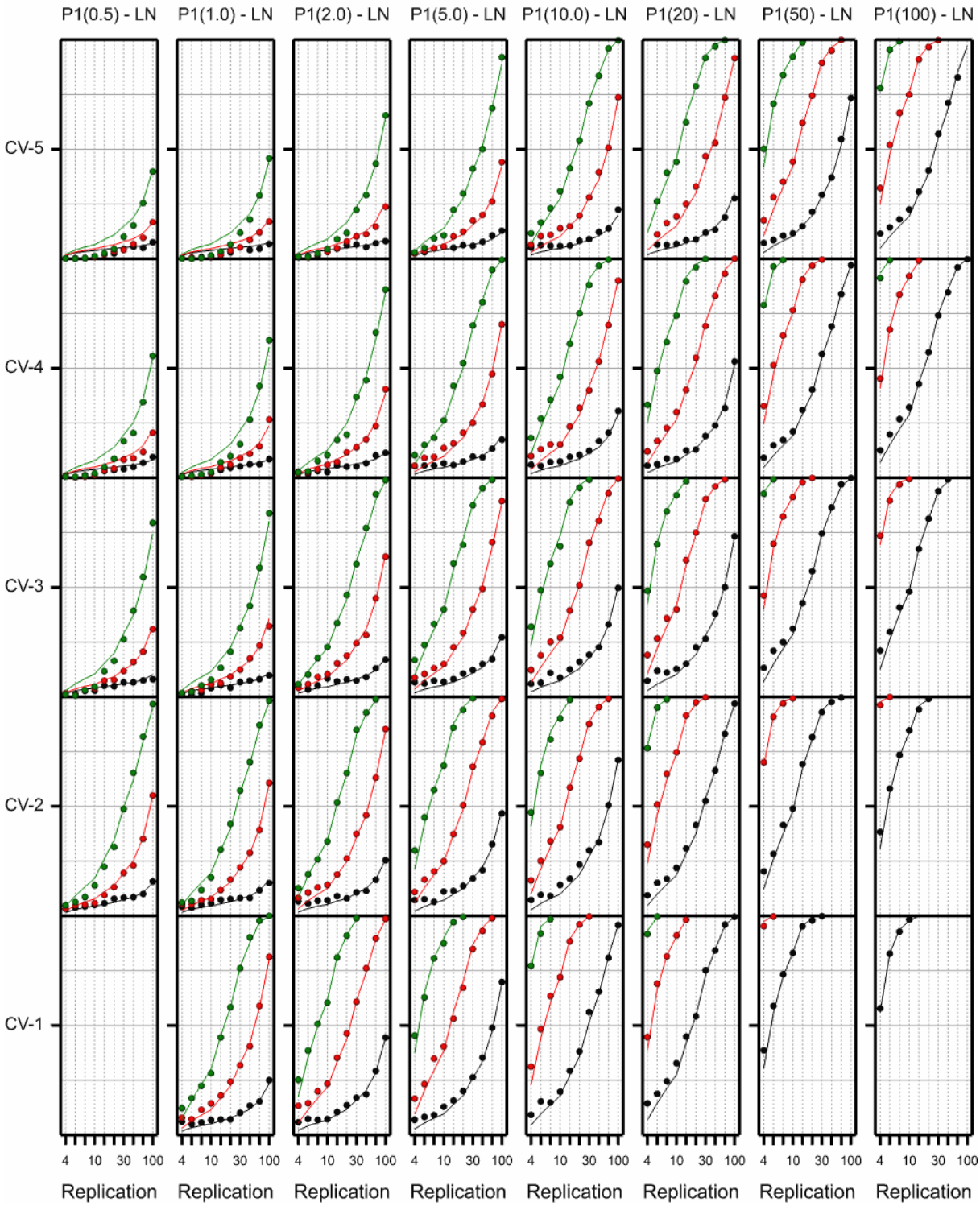
Appendix 1 S4: Power of NB & Lyles difference test for Poisson-LogNormal



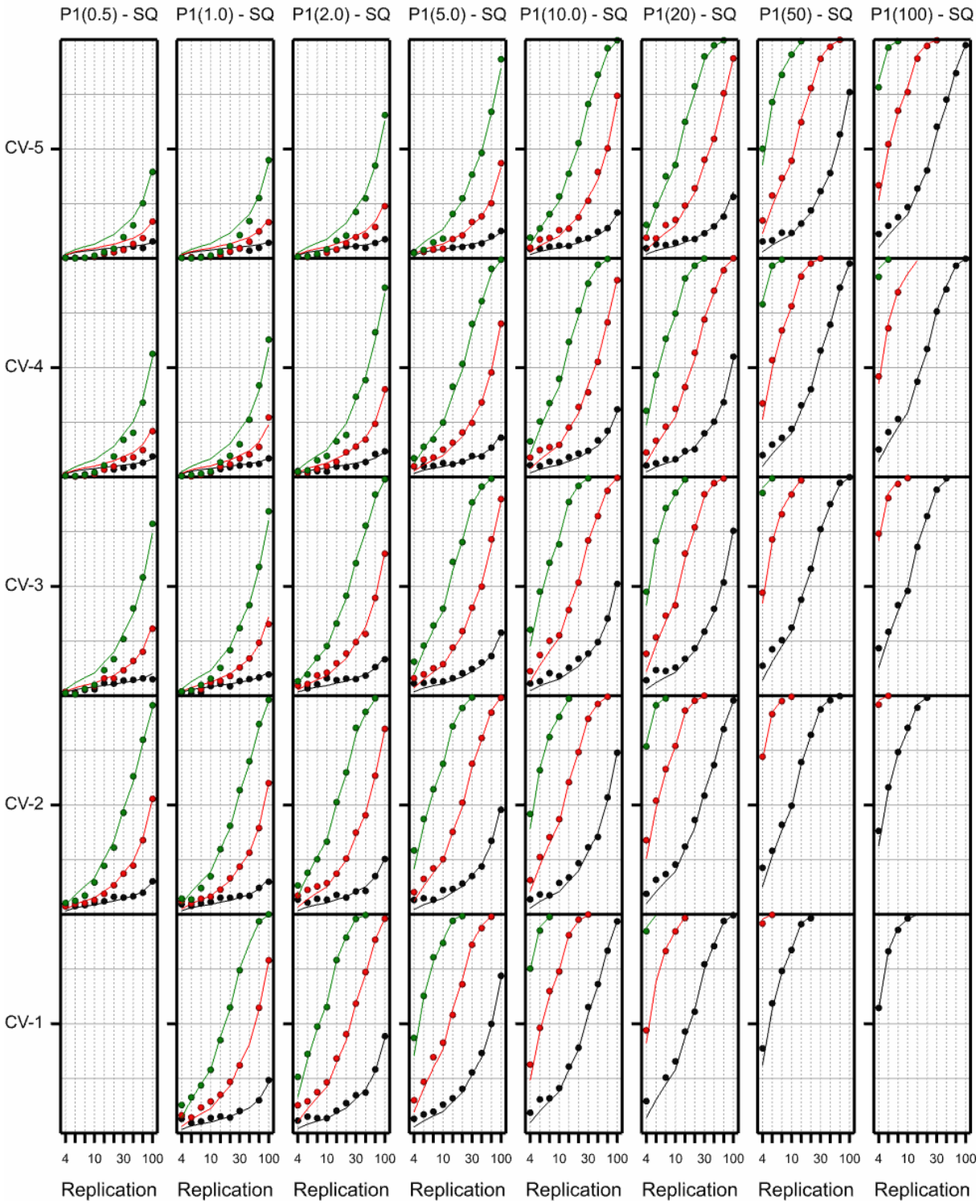
Appendix 1 S5: Power of P1 & Lyles difference test for Poisson-LogNormal



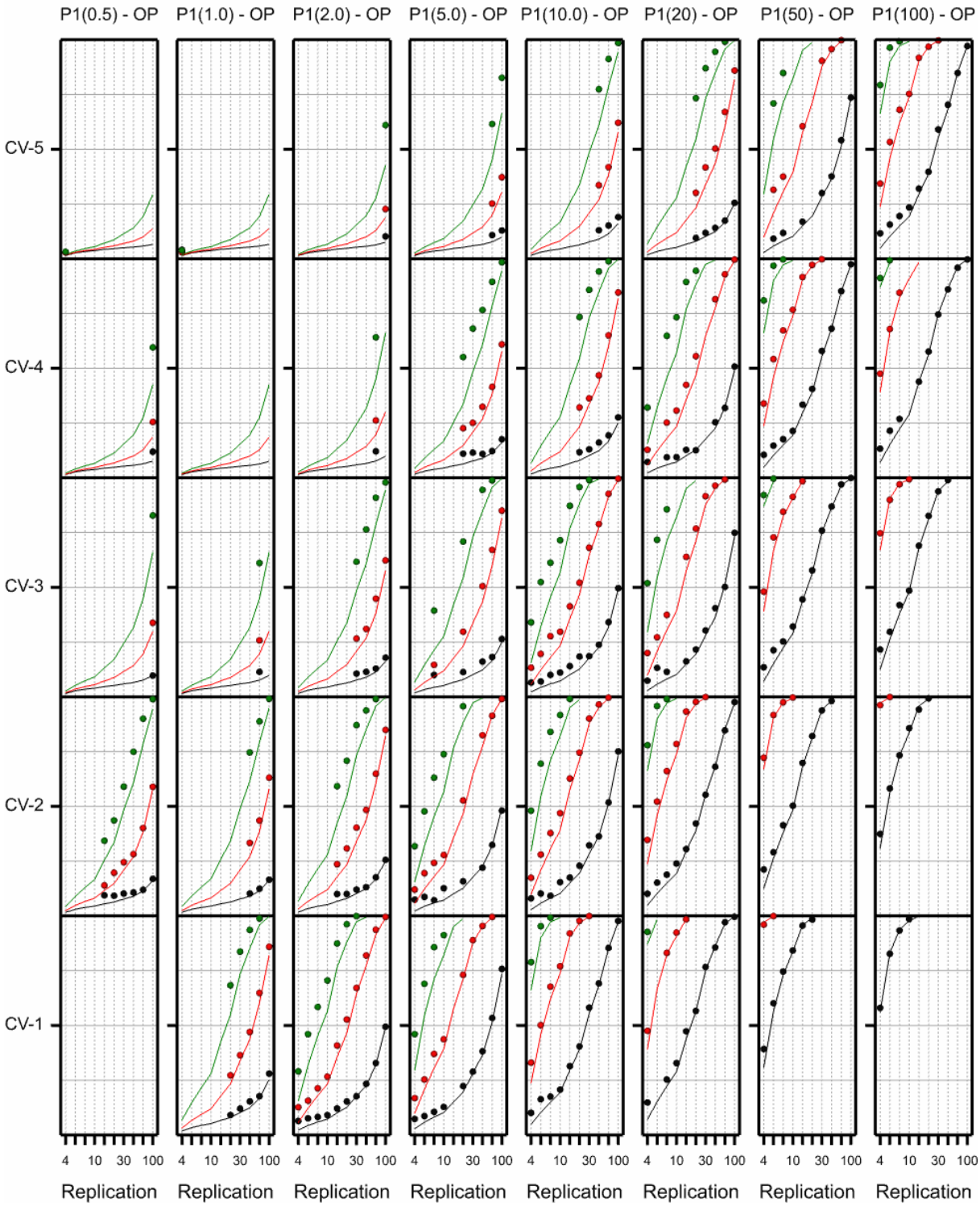
Appendix 1 T1: Power of LN & Lyles difference test for Power(1.5)



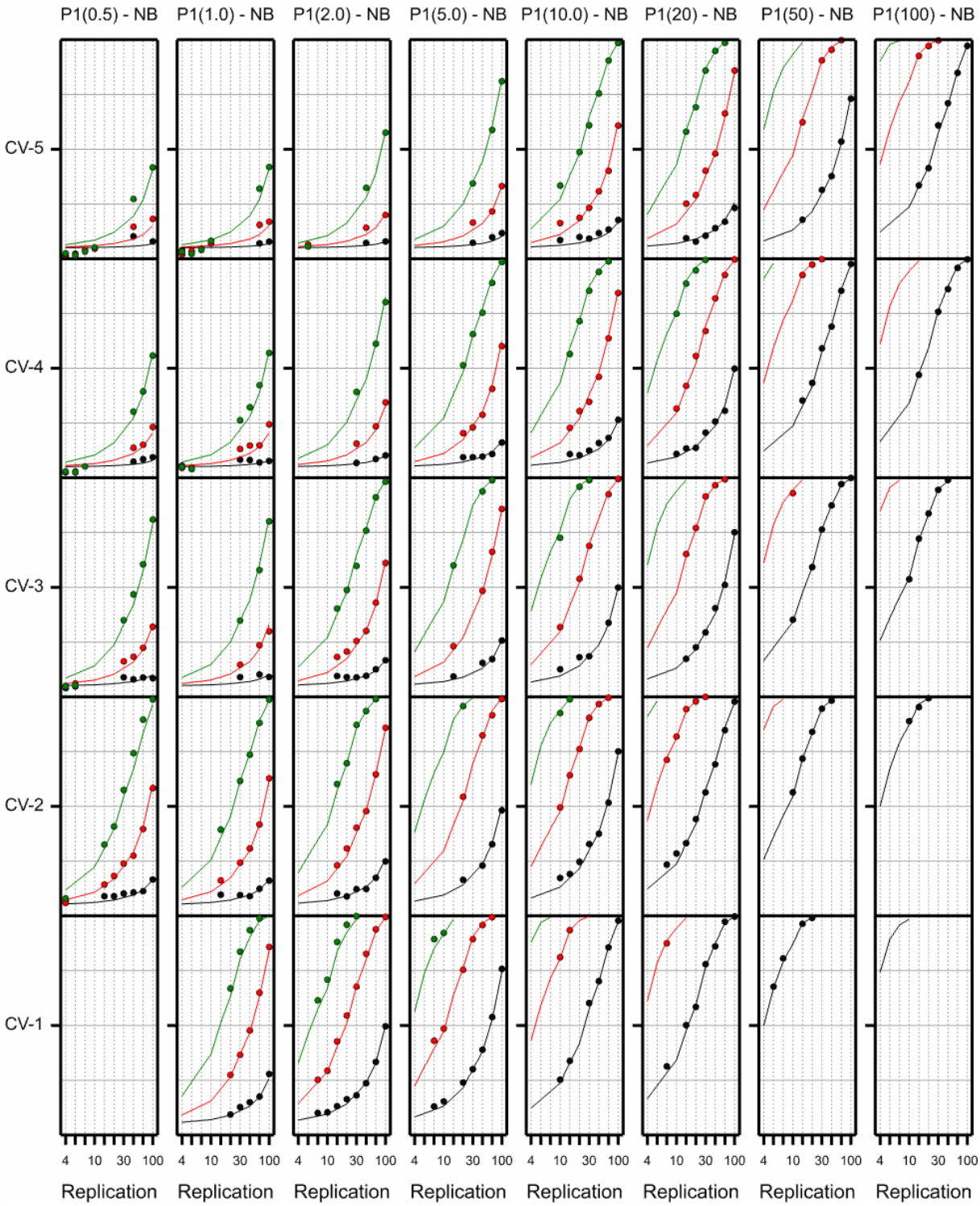
Appendix 1 T2: Power of SQ & Lyles difference test for Power(1.5)



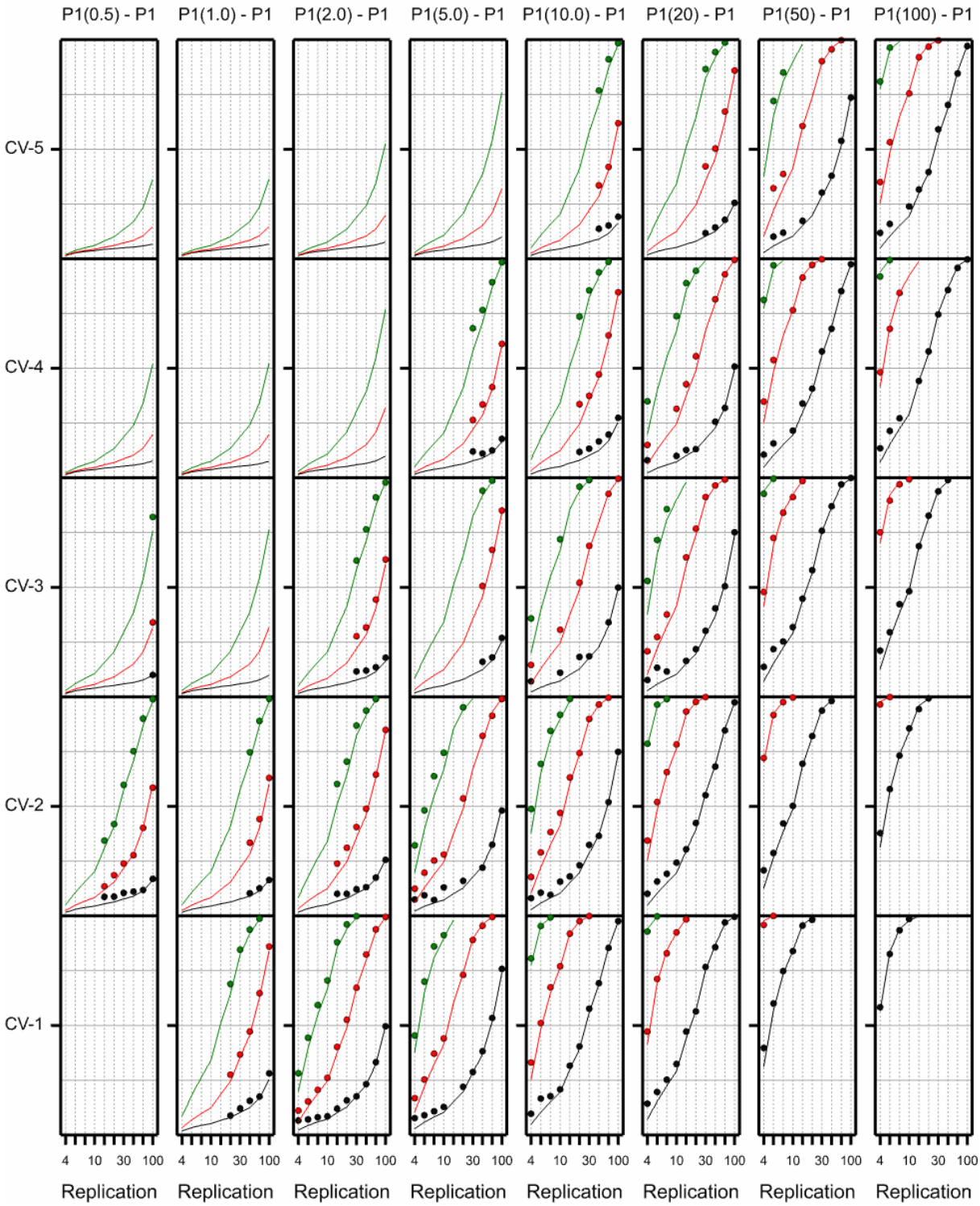
Appendix 1 T3: Power of OP & Lyles difference test for Power(1.5)



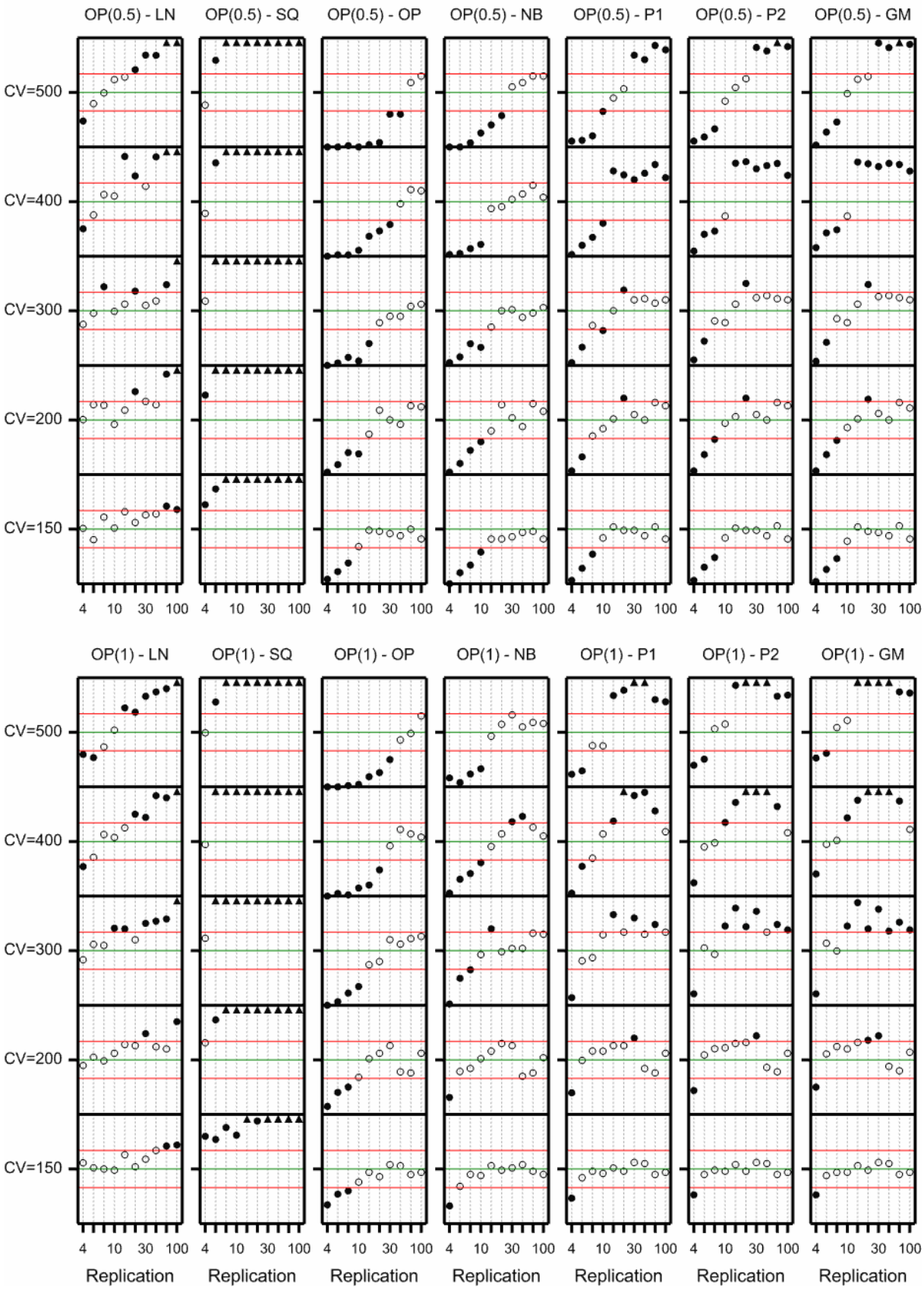
Appendix 1 T4: Power of NB & Lyles difference test for Power(1.5)



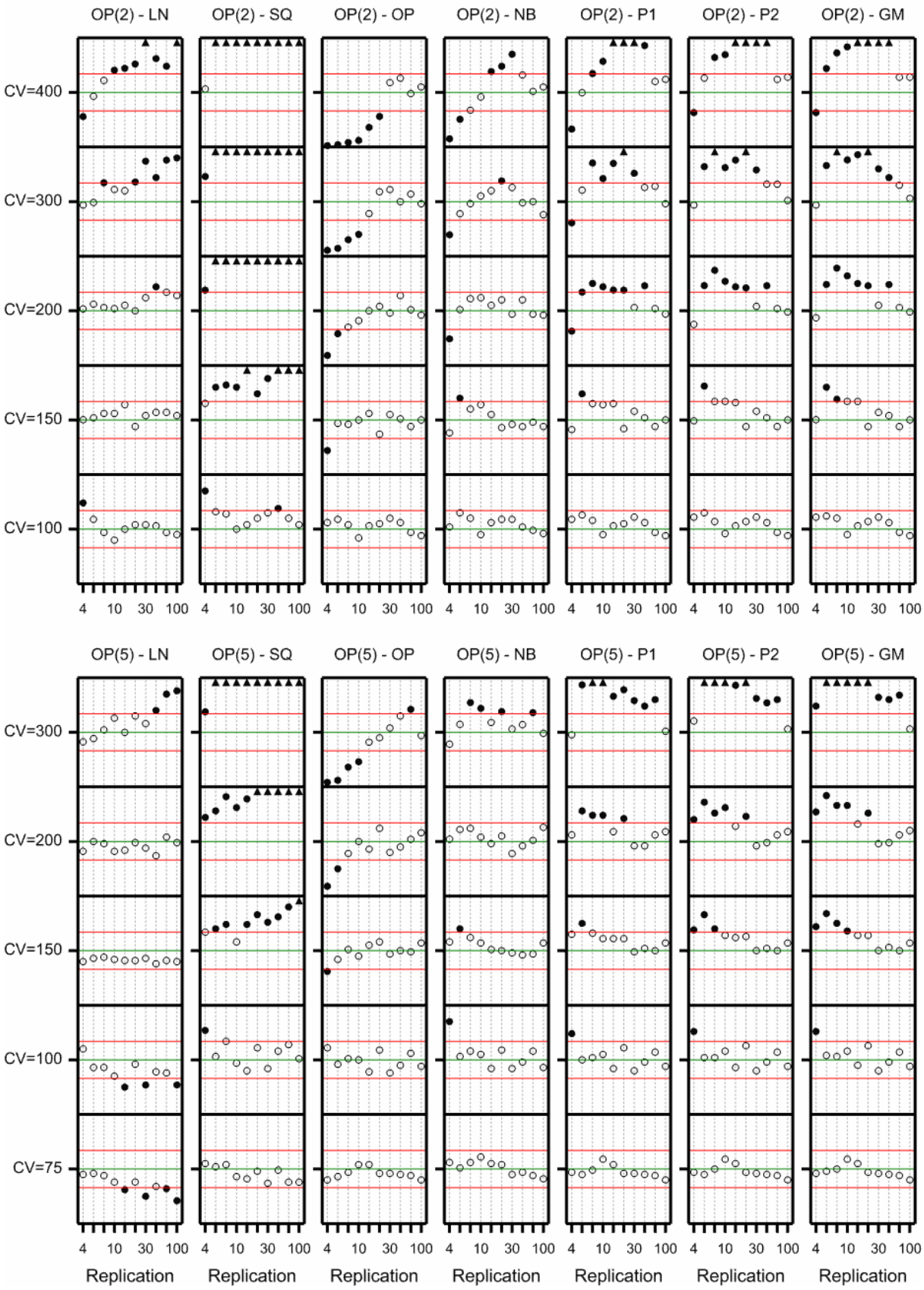
Appendix 1 T5: Power of P1 & Lyles difference test for Power(1.5)



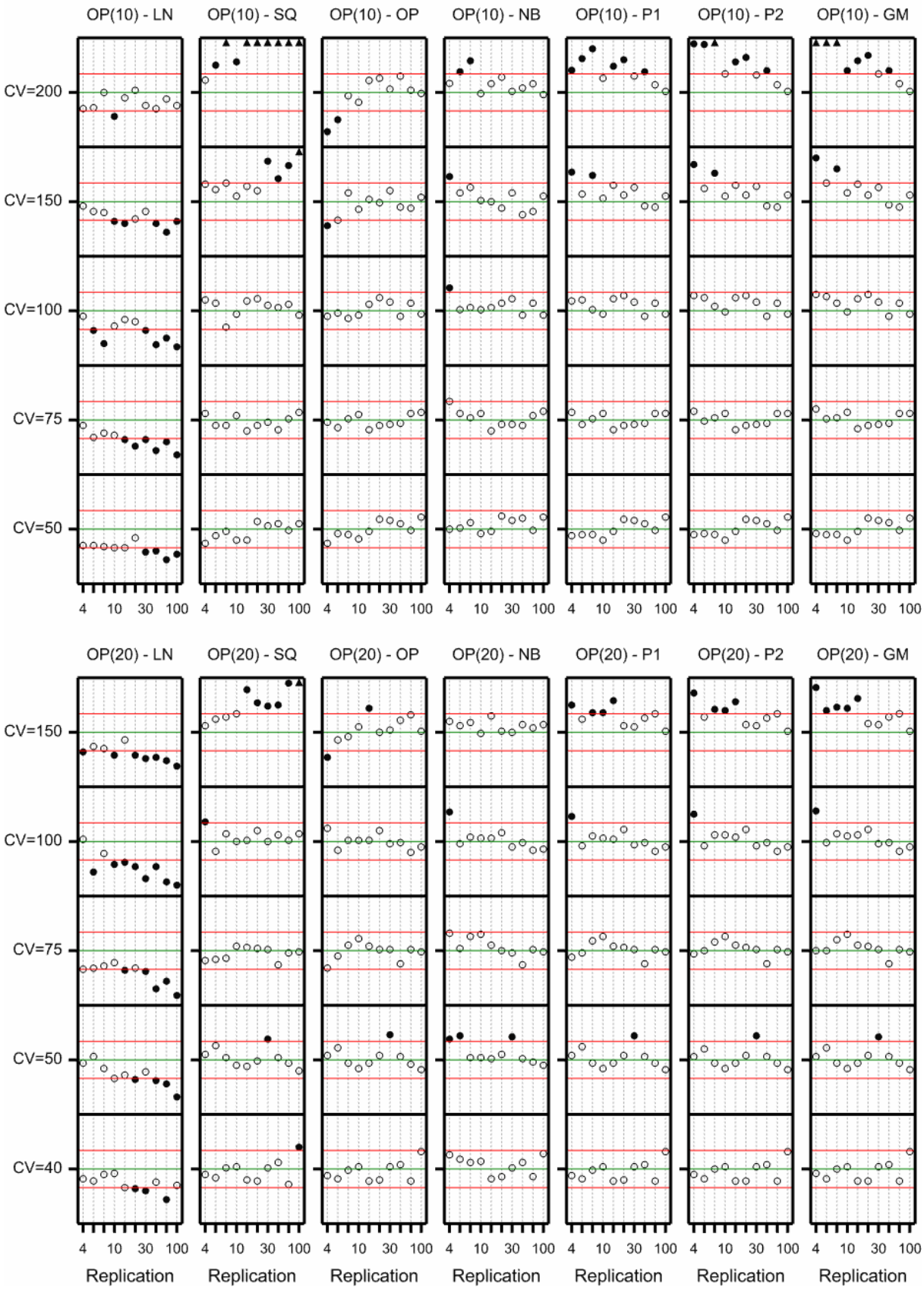
Appendix 2 A1: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.75



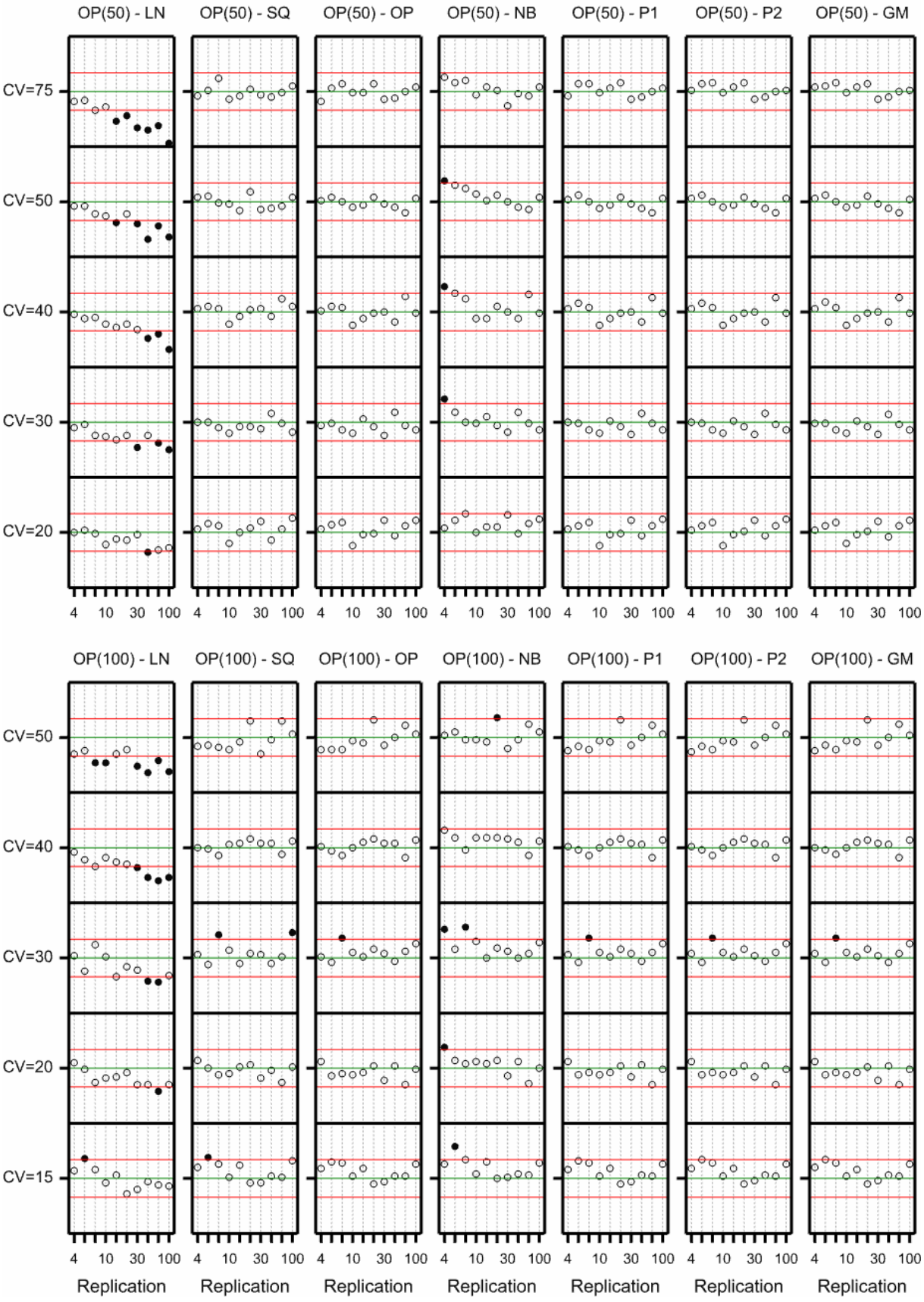
Appendix 2 A2: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.75



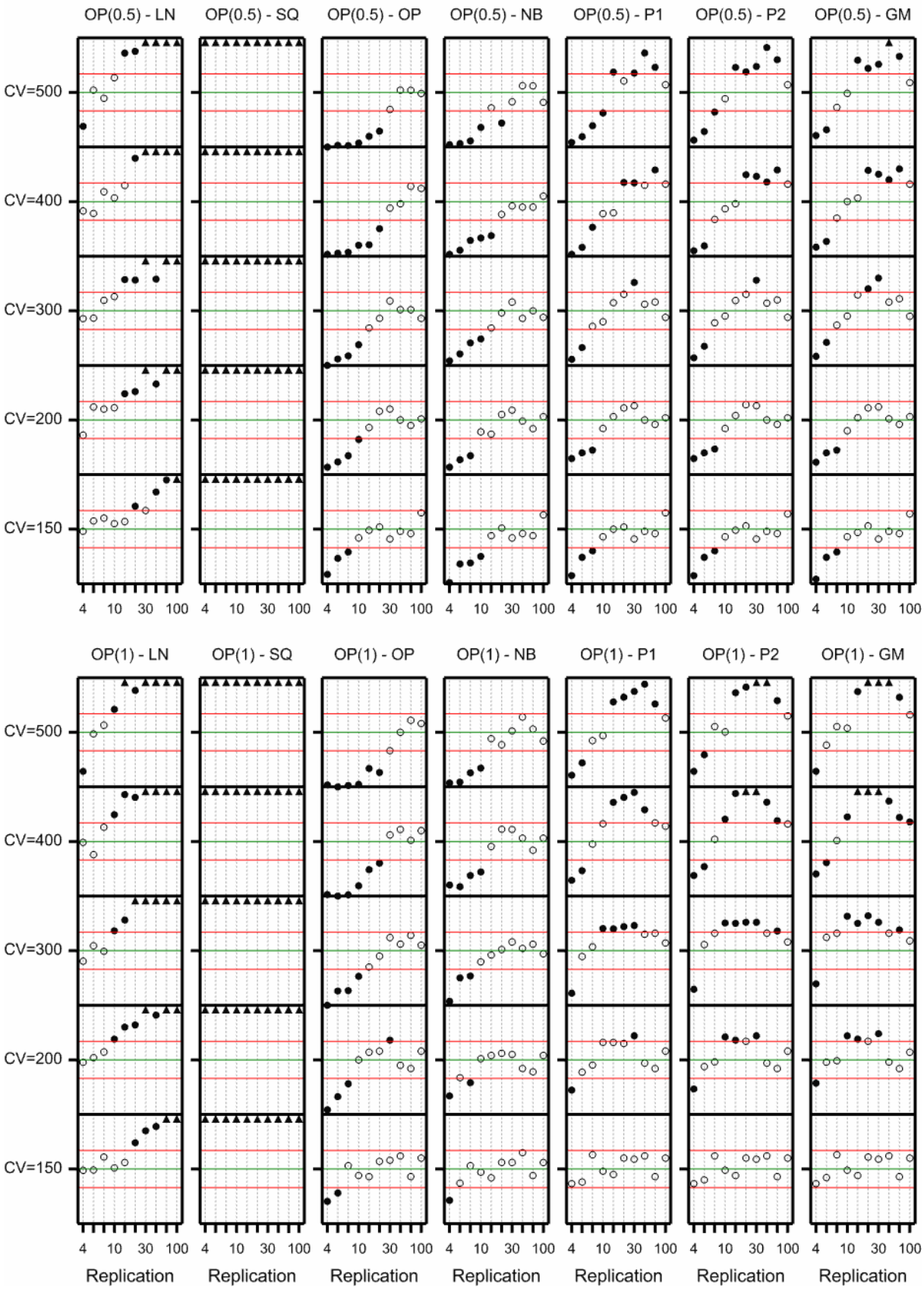
Appendix 2 A3: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.75



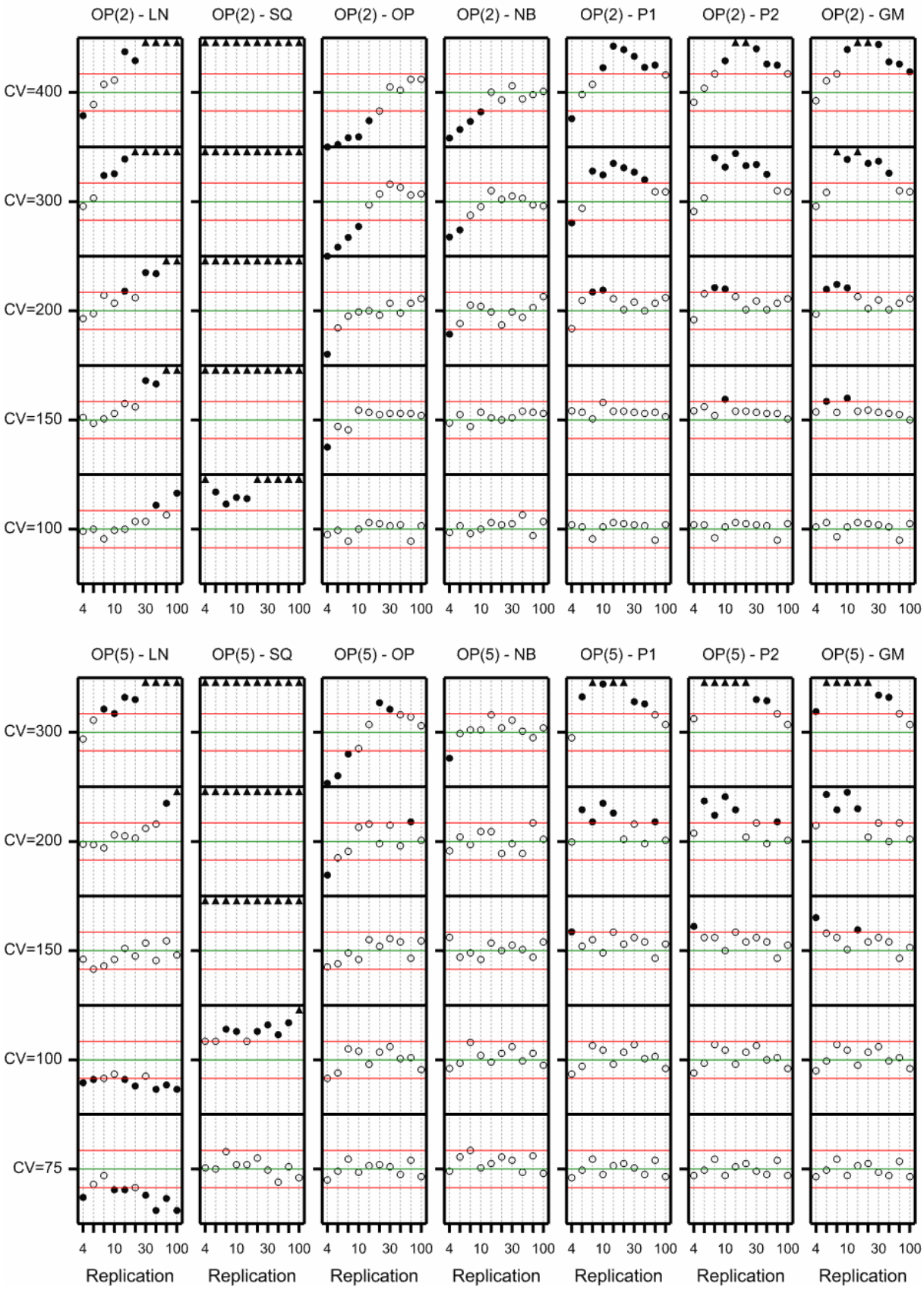
Appendix 2 A4: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.75



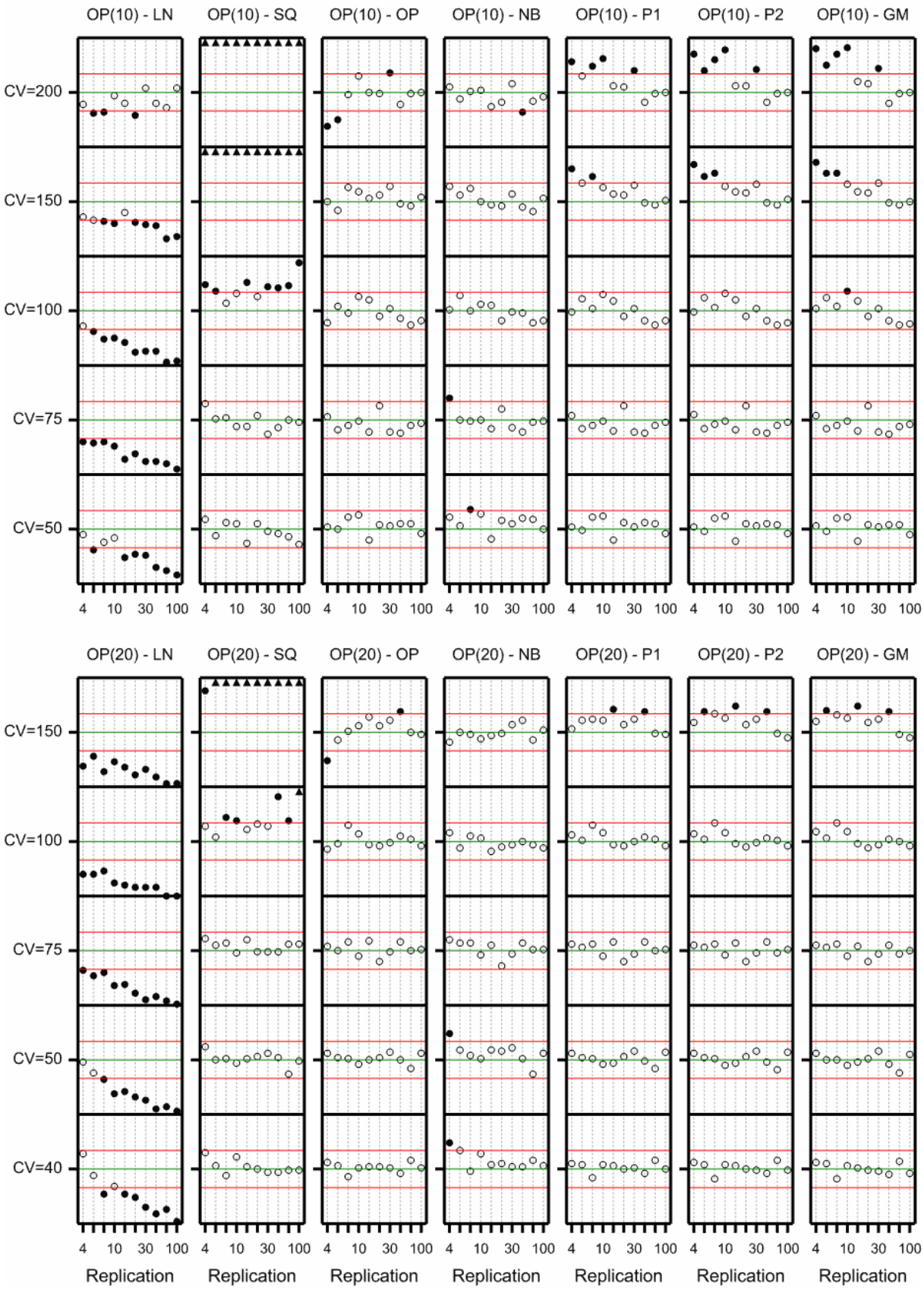
Appendix 2 A5: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.5



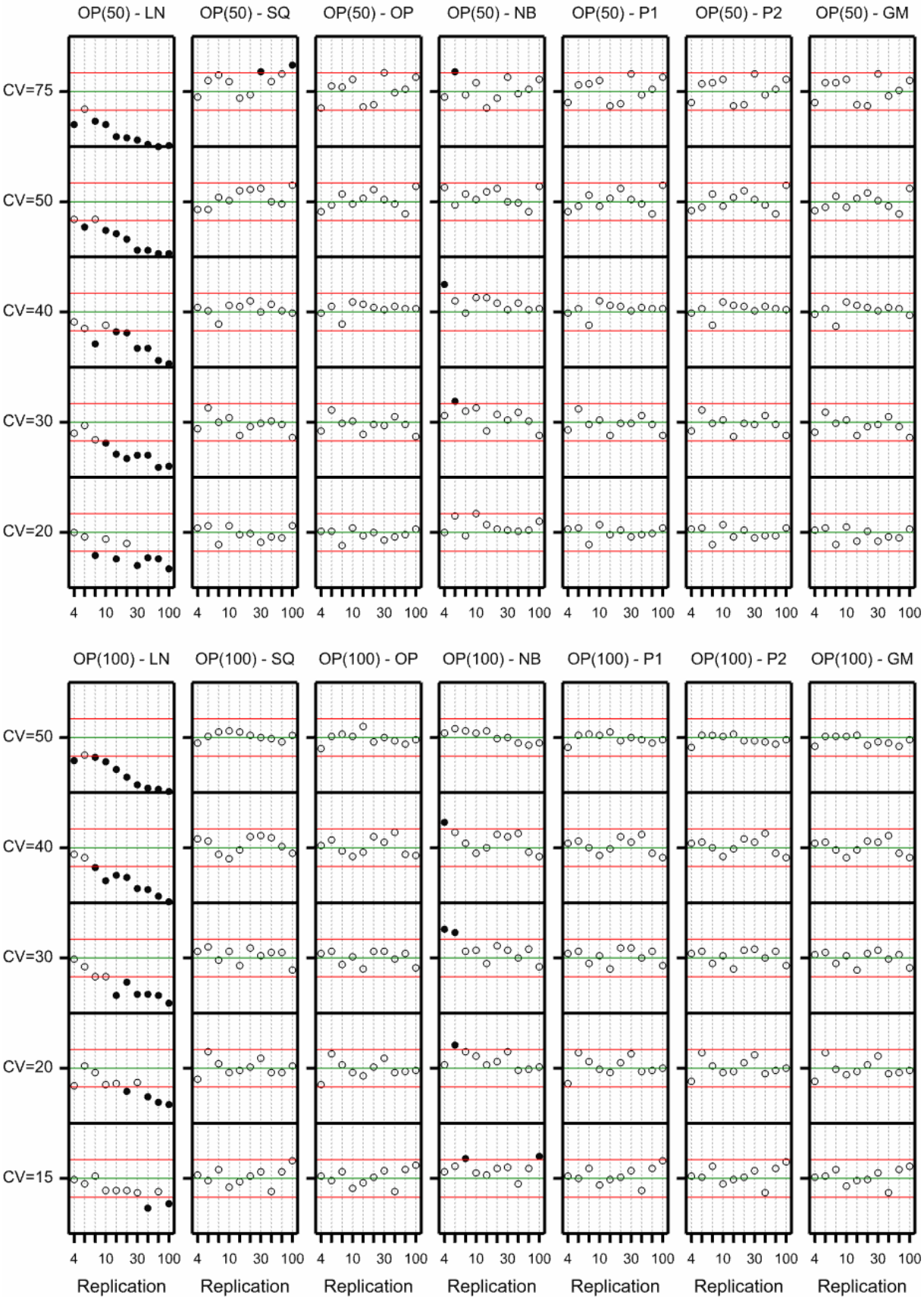
Appendix 2 A6: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.5



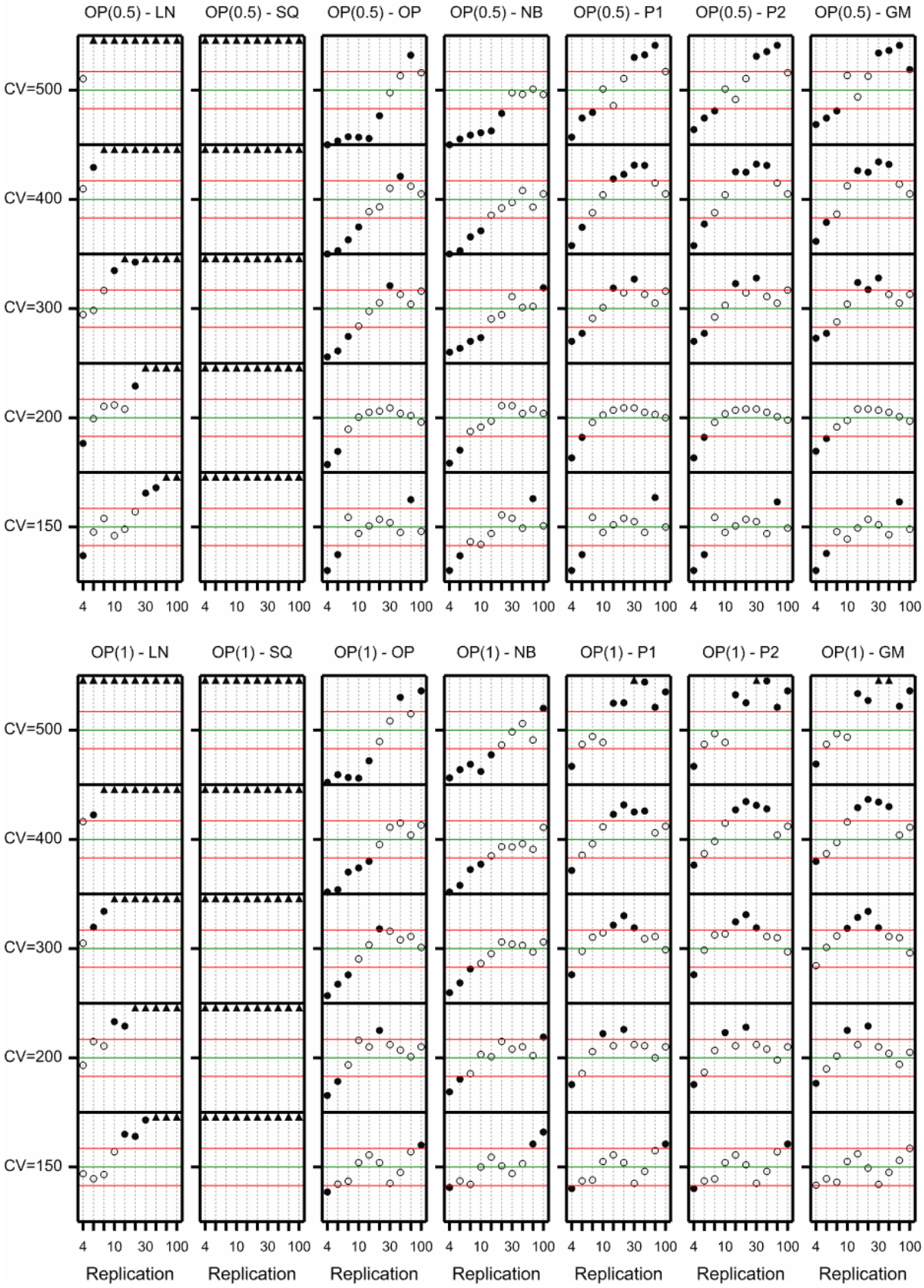
Appendix 2 A7: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.5



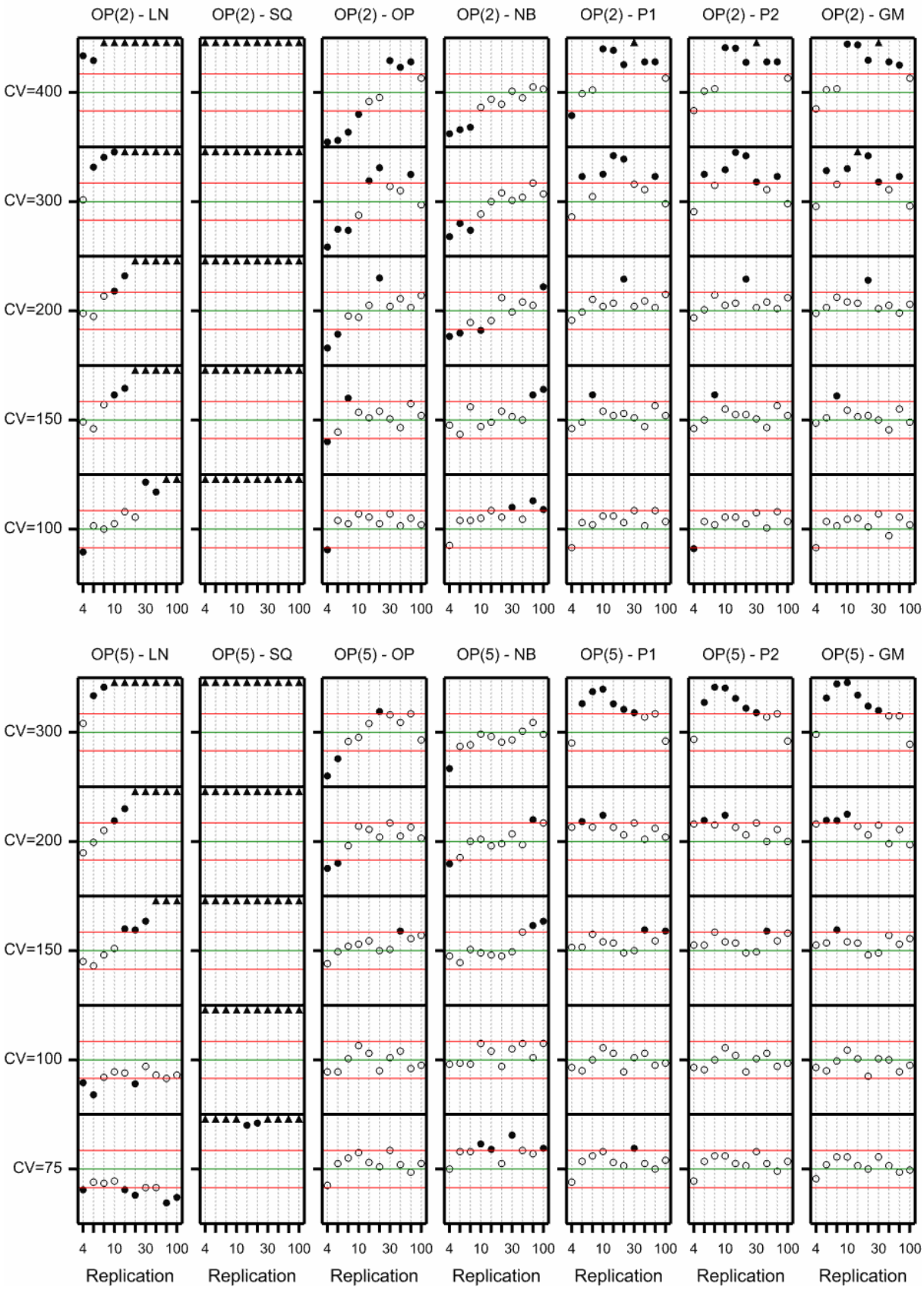
Appendix 2 A8: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.5



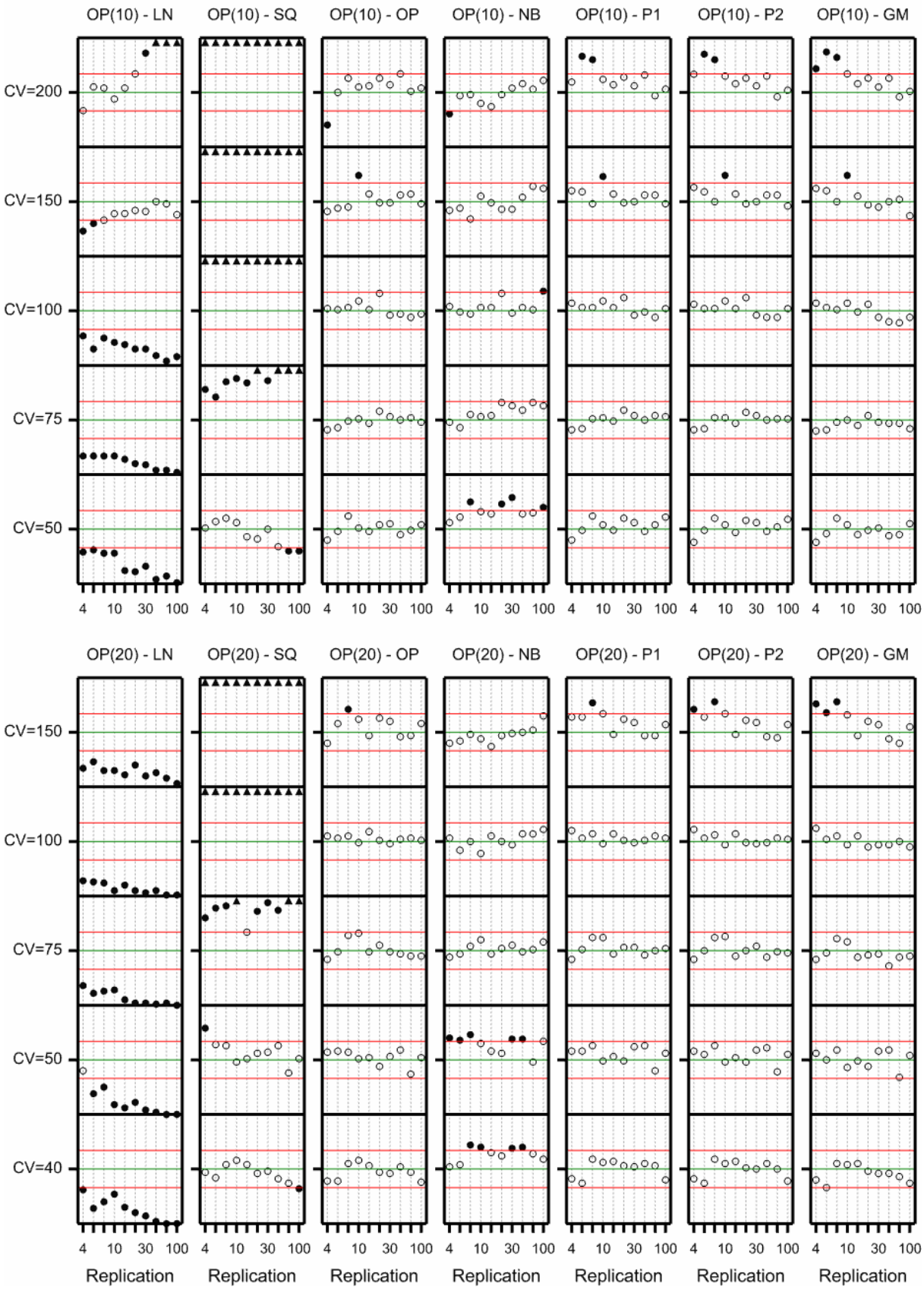
Appendix 2 A9: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.25



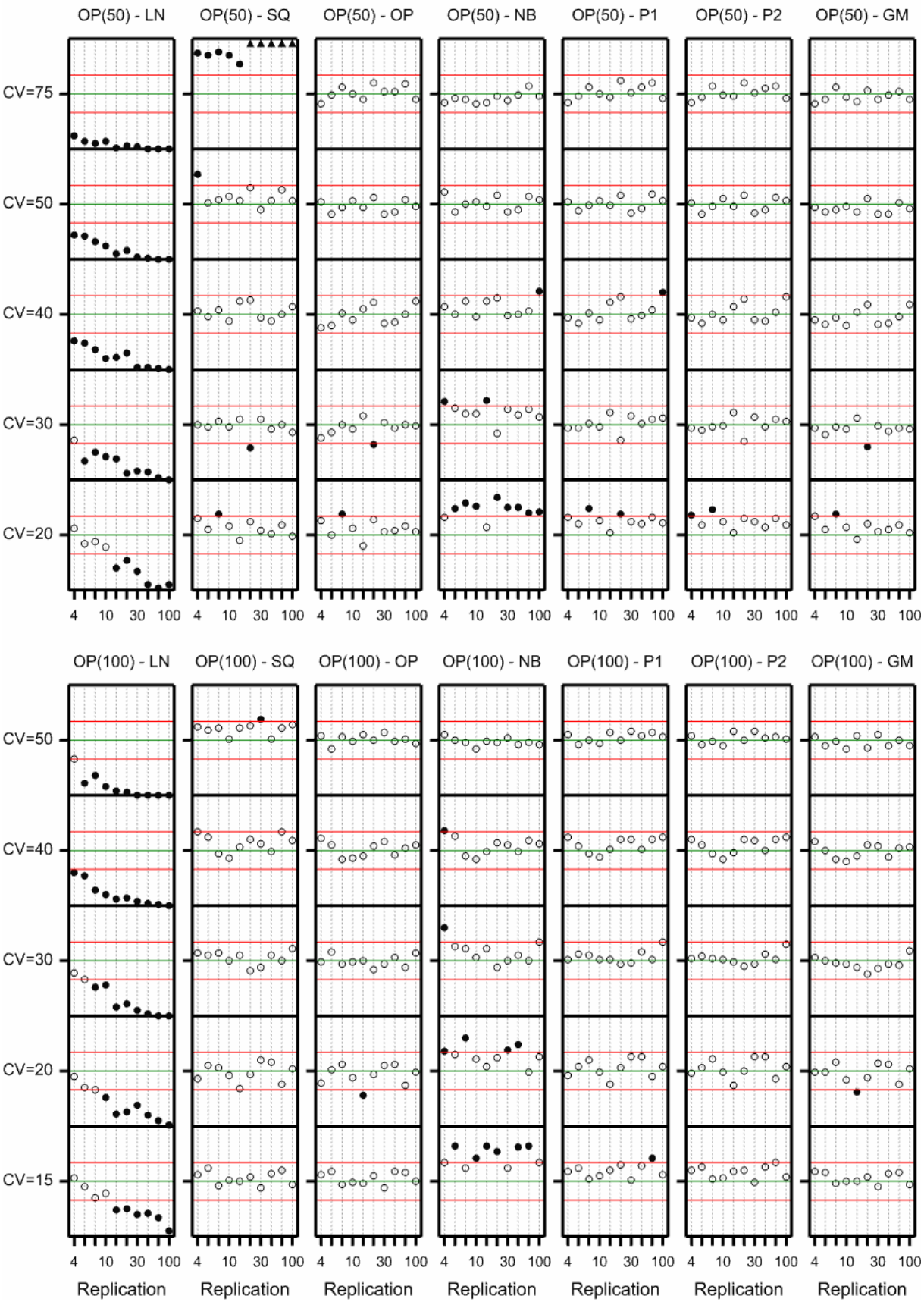
Appendix 2 A10: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.25



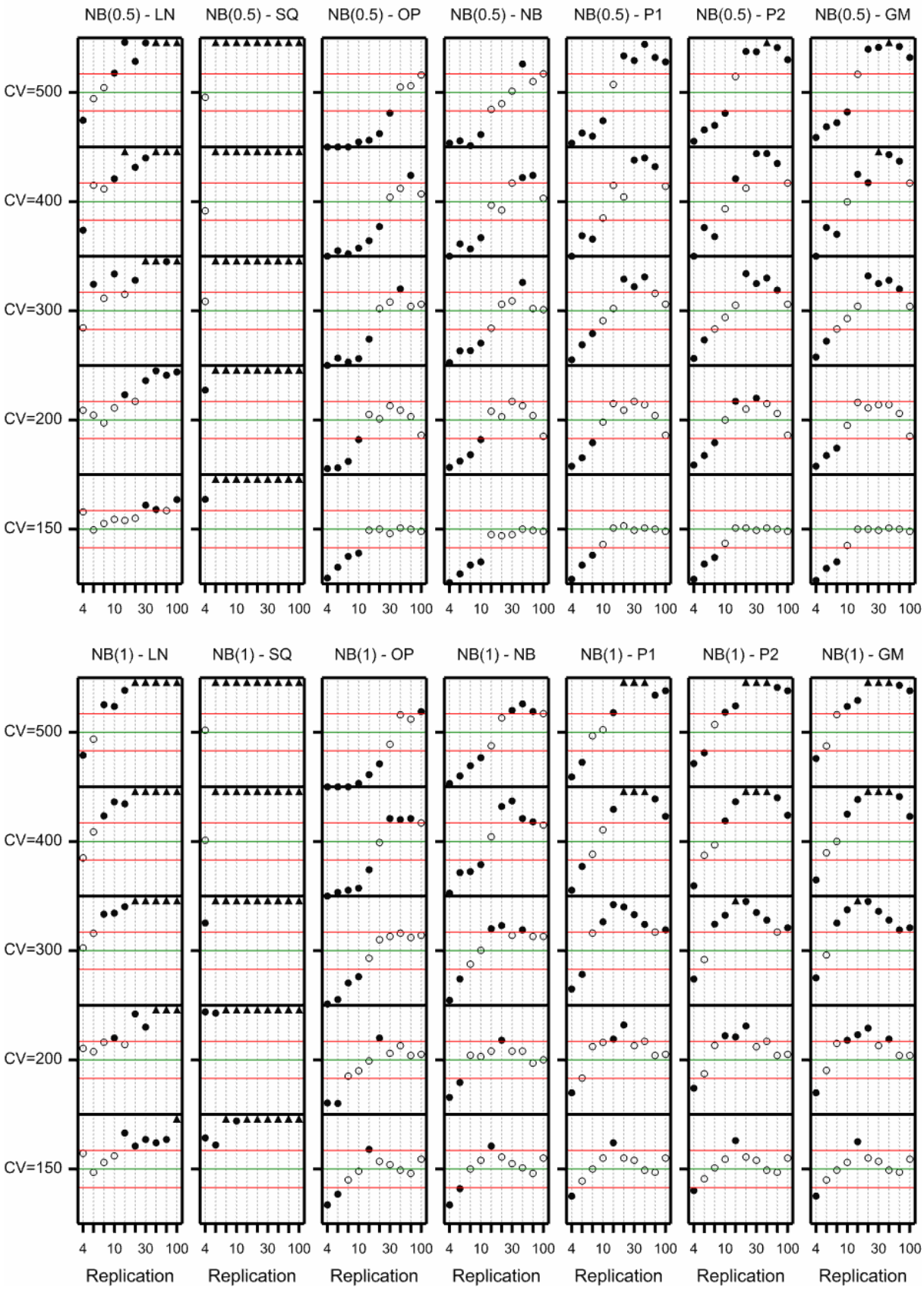
Appendix 2 A11: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.25



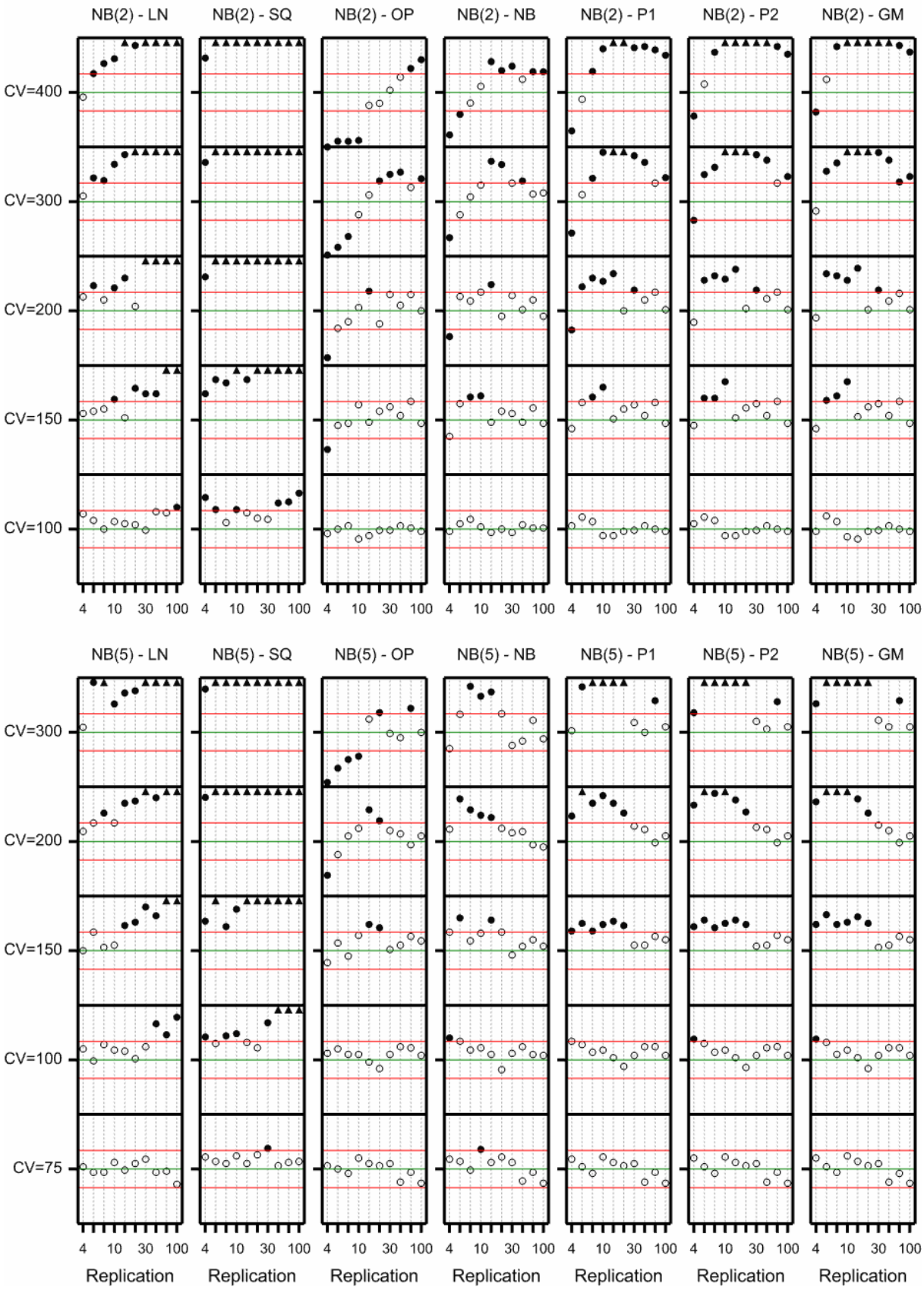
Appendix 2 A12: Size of equivalence test for Overdispersed Poisson; LOC = Q = 0.25



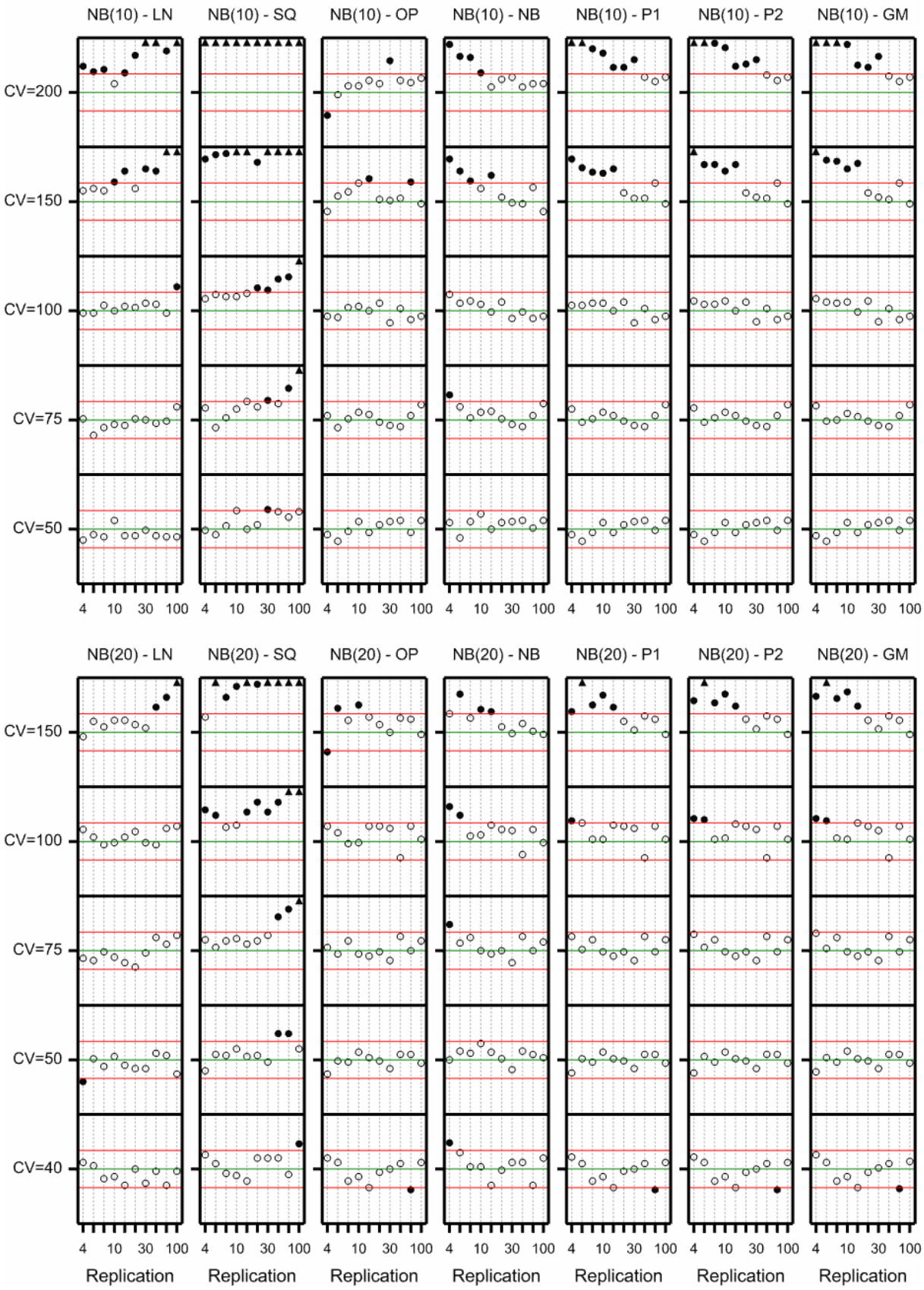
Appendix 2 B1: Size of equivalence test for Negative Binomial; LOC = Q = 0.75



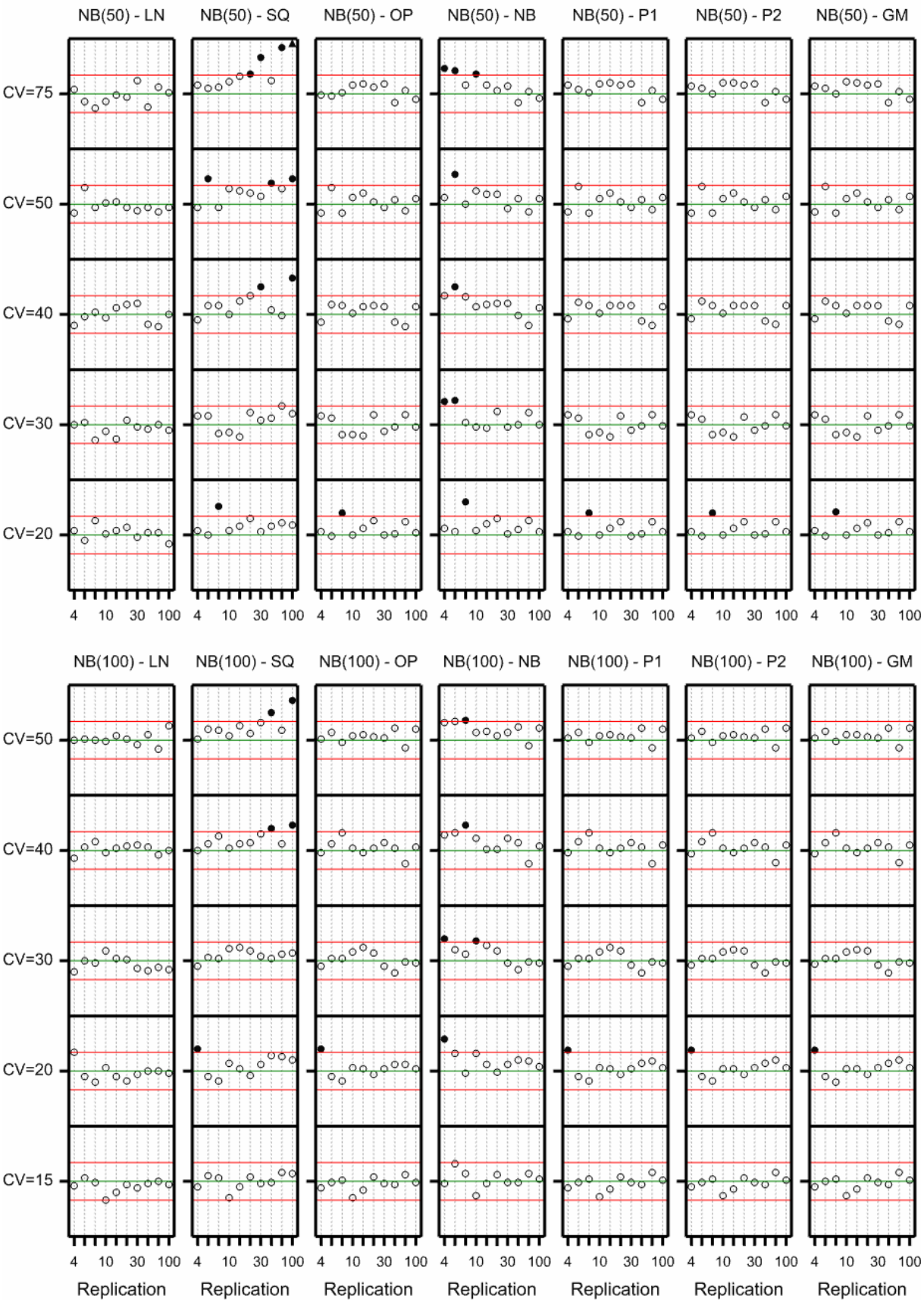
Appendix 2 B2: Size of equivalence test for Negative Binomial; LOC = Q = 0.75



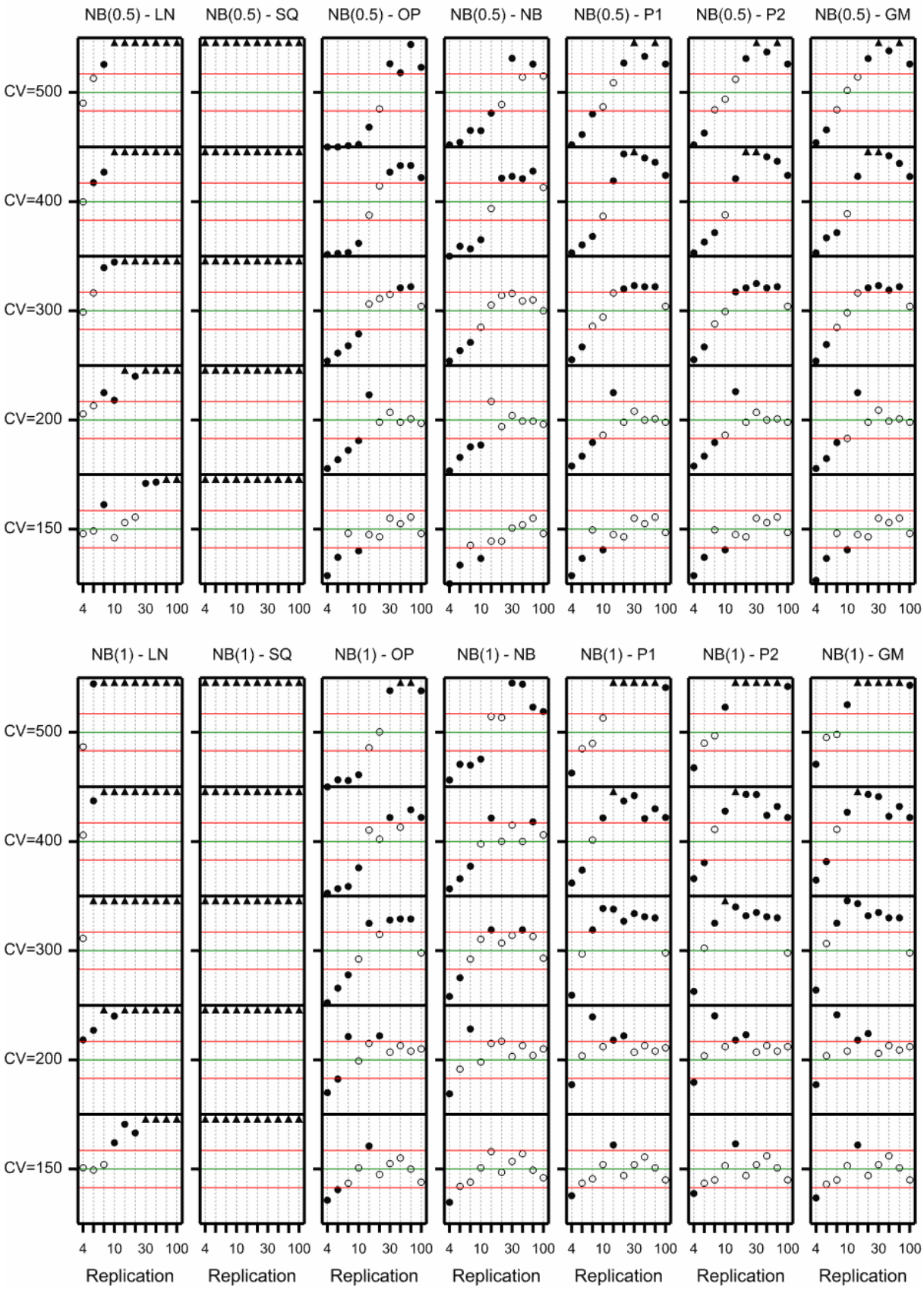
Appendix 2 B3: Size of equivalence test for Negative Binomial; LOC = Q = 0.75



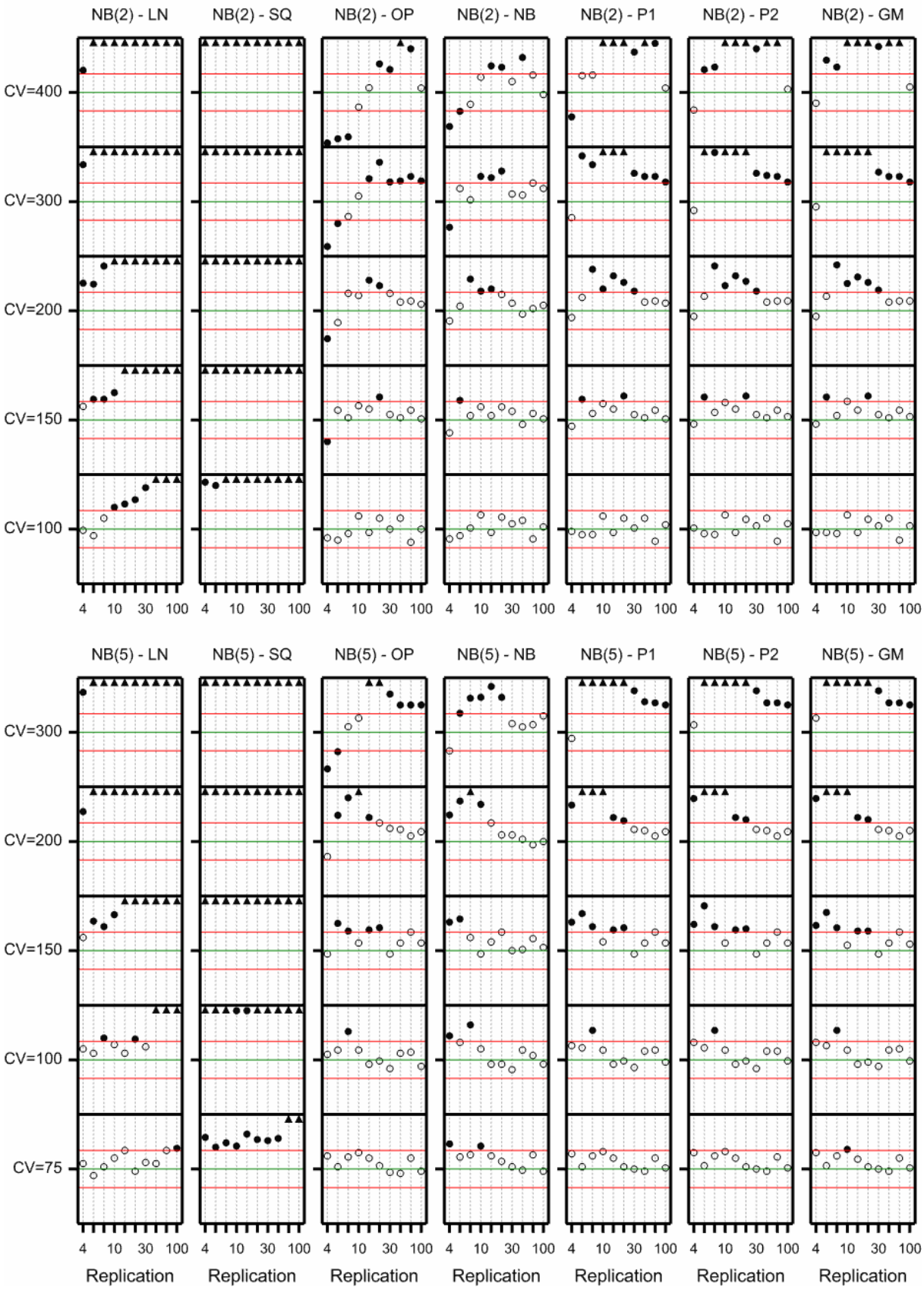
Appendix 2 B4: Size of equivalence test for Negative Binomial; LOC = Q = 0.75



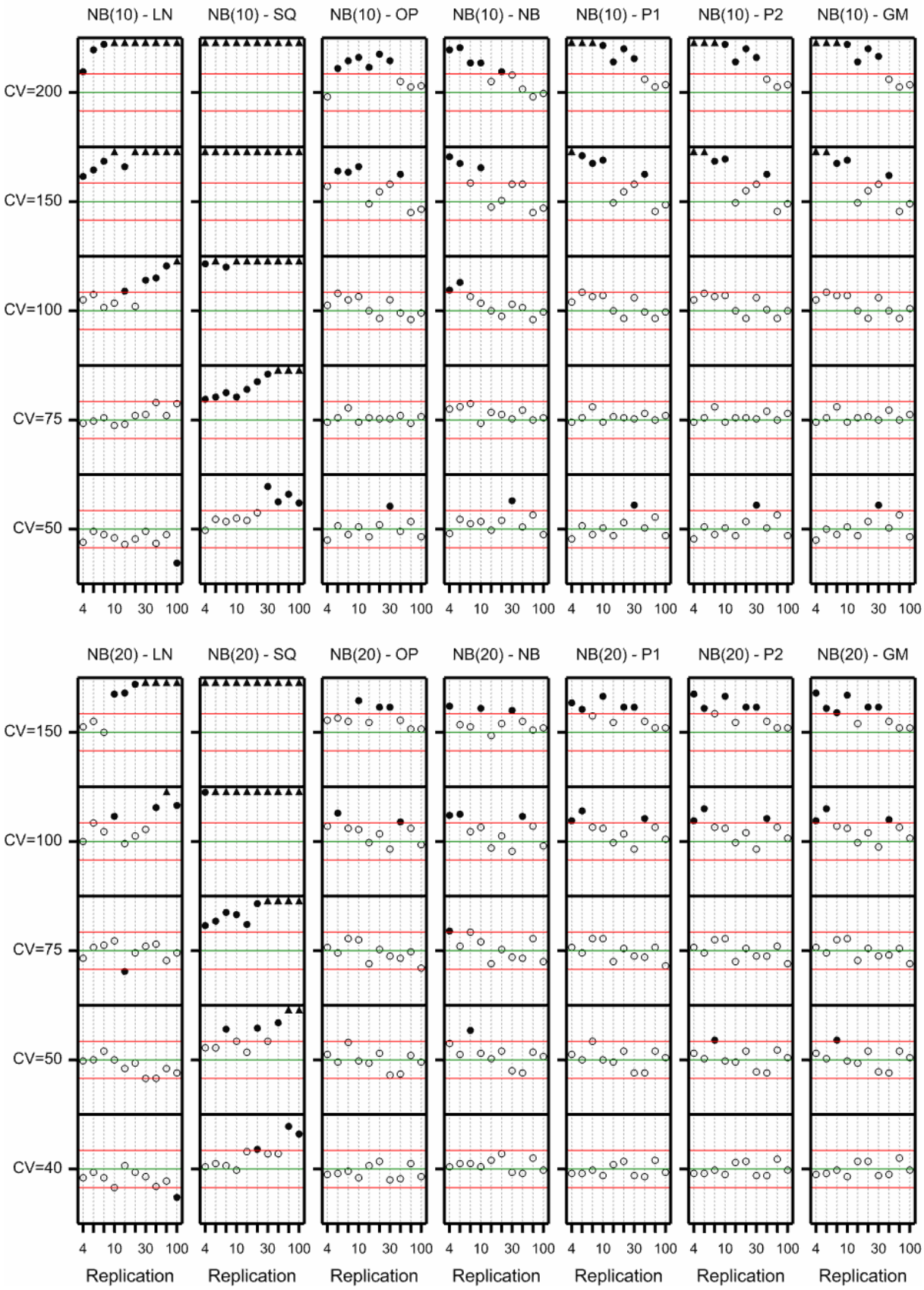
Appendix 2 B5: Size of equivalence test for Negative Binomial; LOC = Q = 0.5



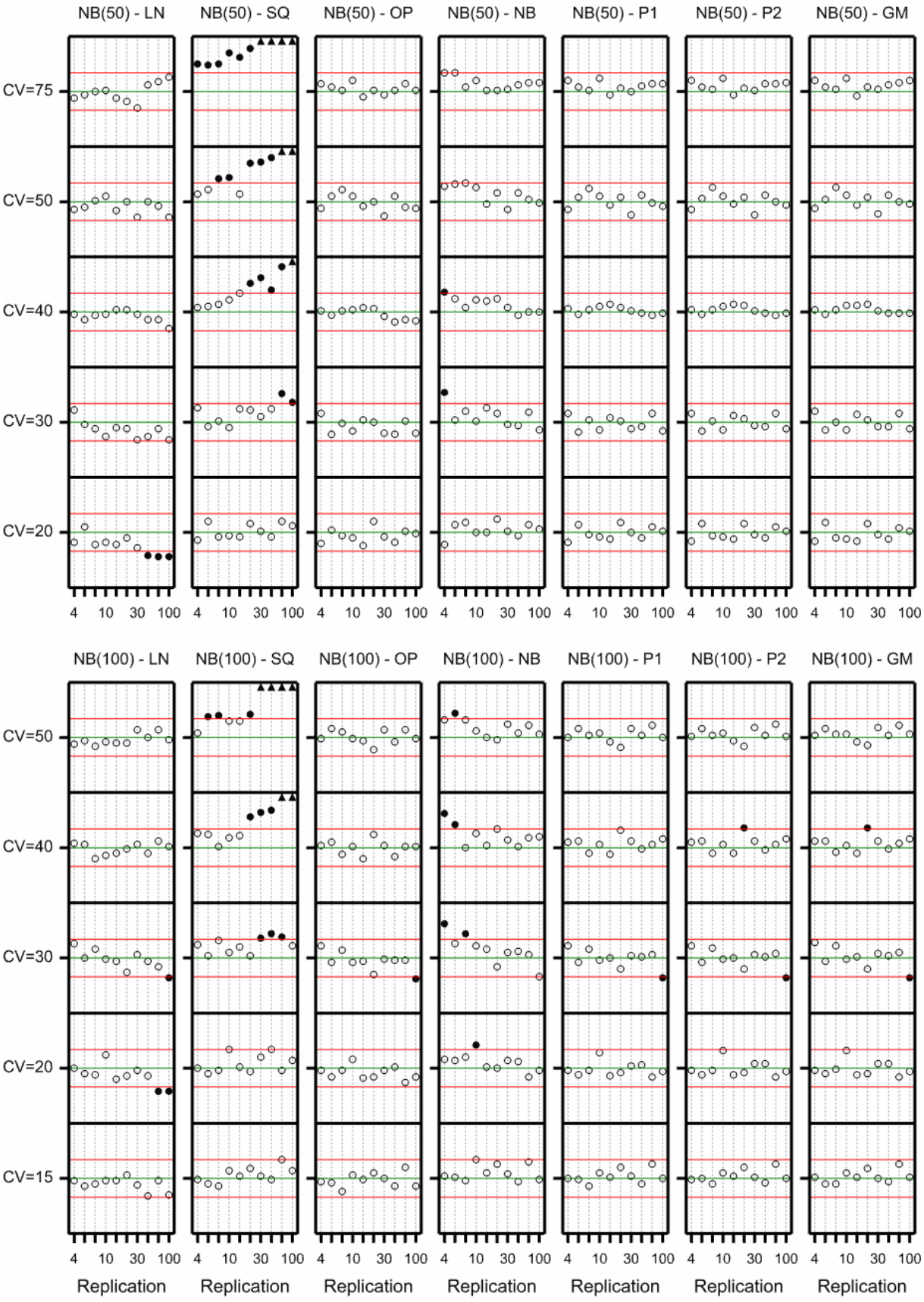
Appendix 2 B6: Size of equivalence test for Negative Binomial; LOC = Q = 0.5



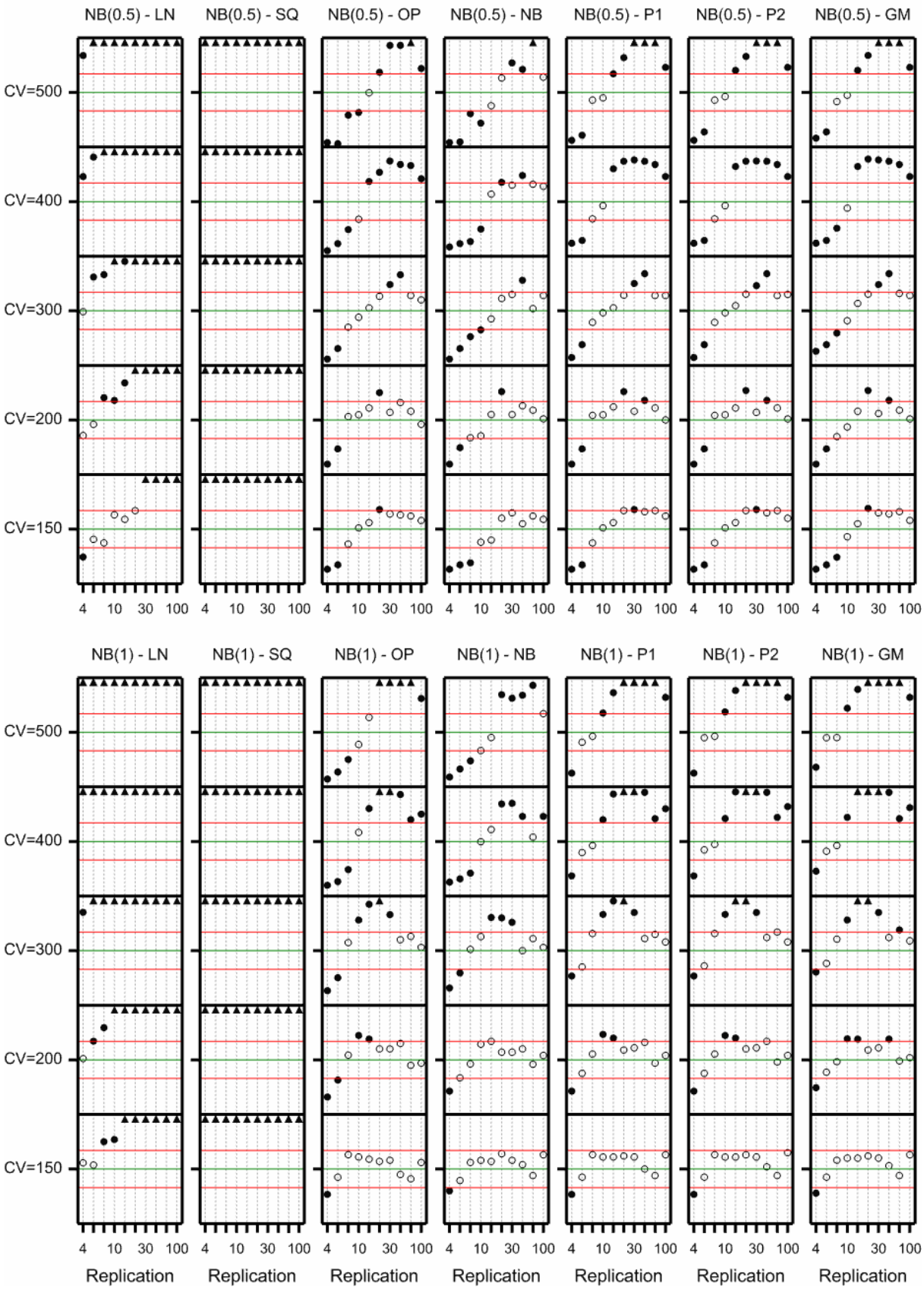
Appendix 2 B7: Size of equivalence test for Negative Binomial; LOC = Q = 0.5



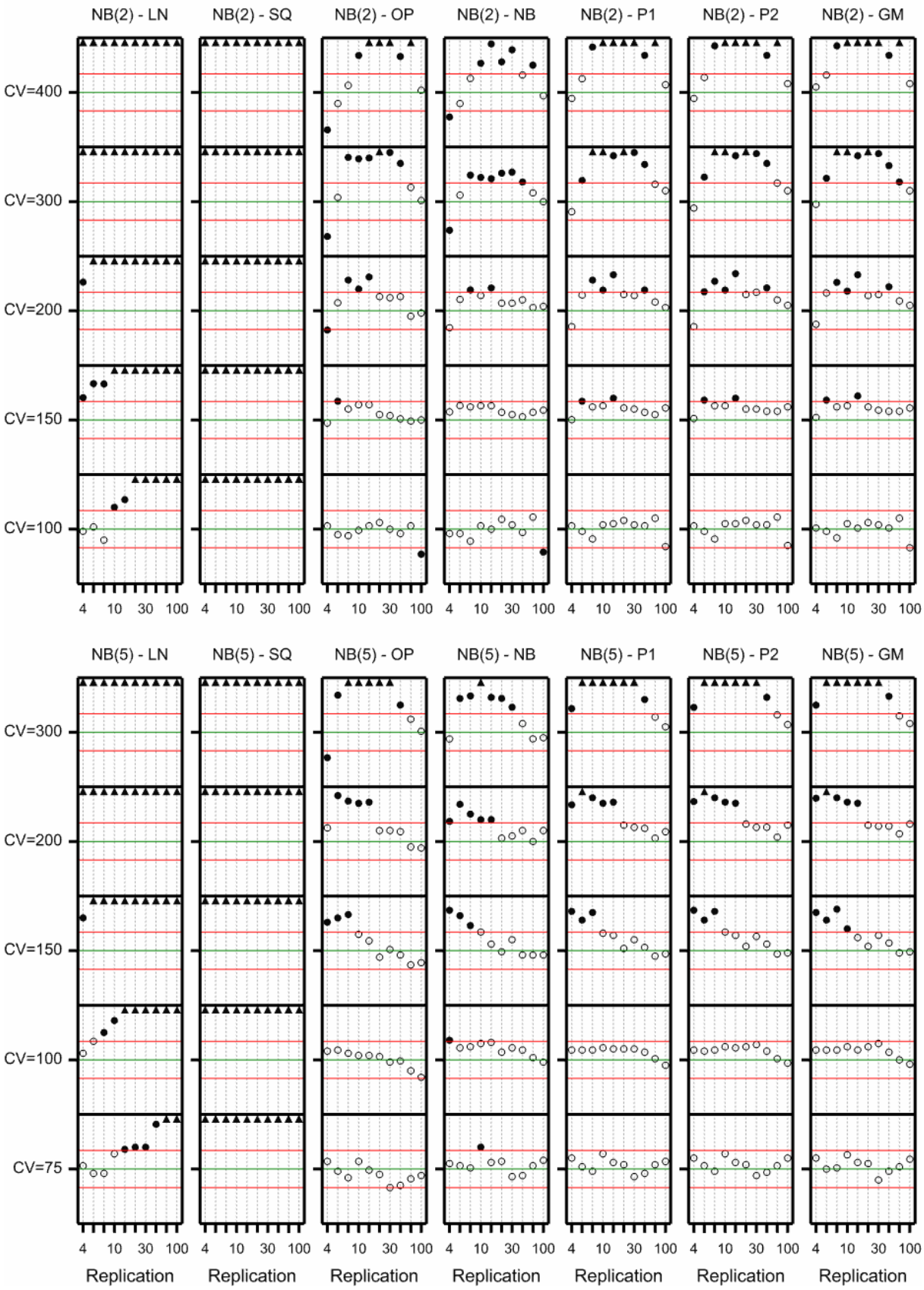
Appendix 2 B8: Size of equivalence test for Negative Binomial; LOC = Q = 0.5



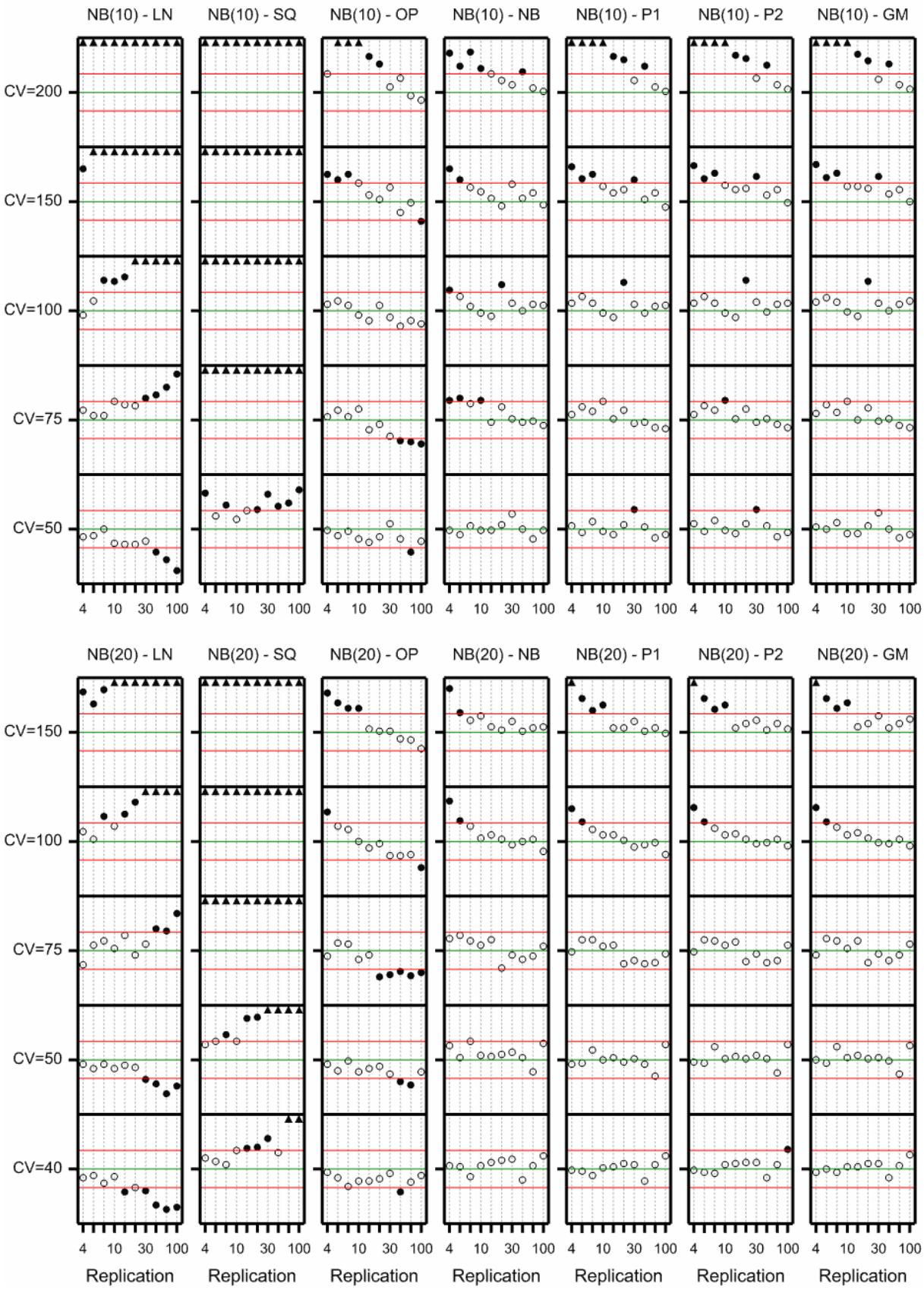
Appendix 2 B9: Size of equivalence test for Negative Binomial; LOC = Q = 0.25



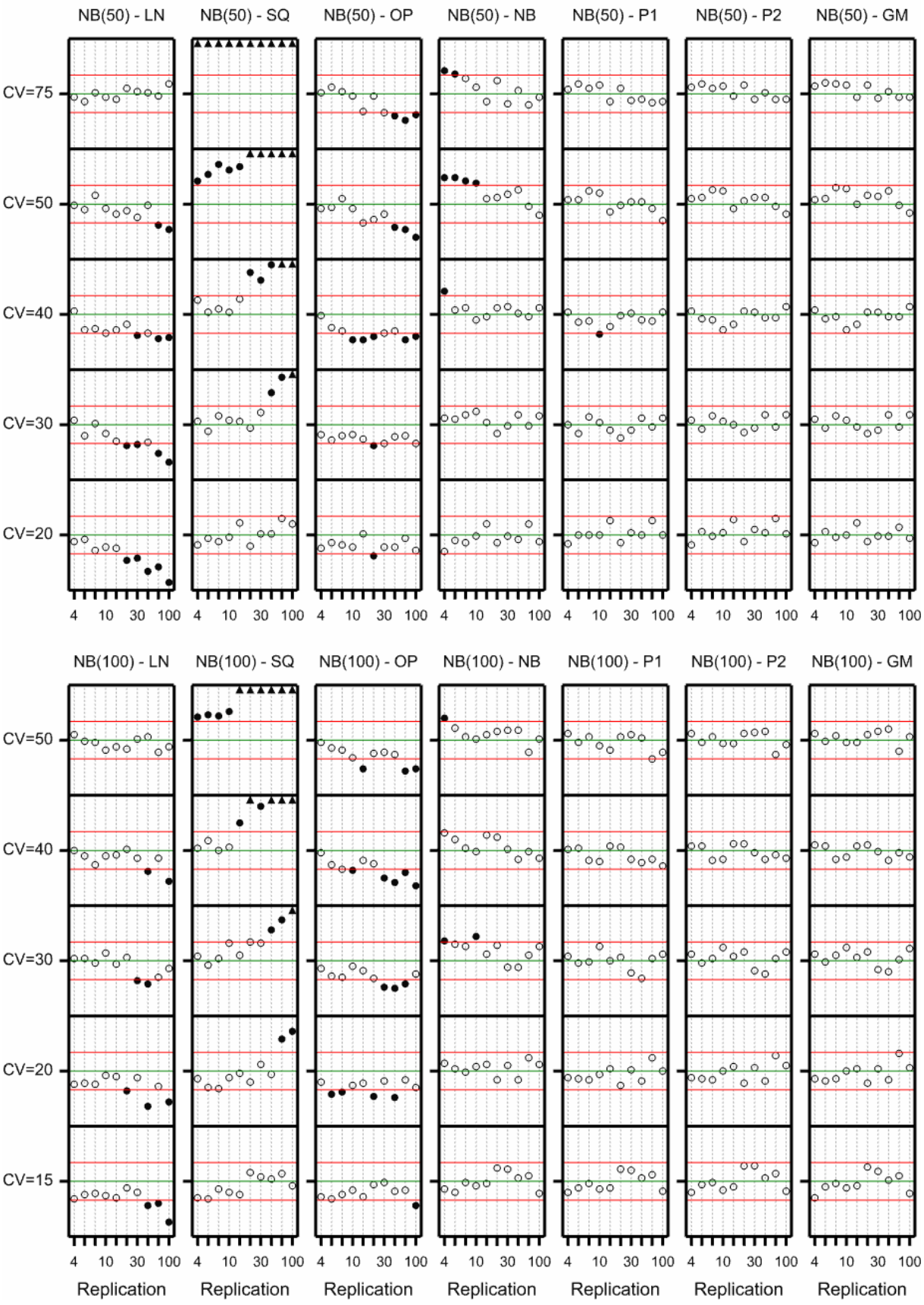
Appendix 2 B10: Size of equivalence test for Negative Binomial; LOC = Q = 0.25



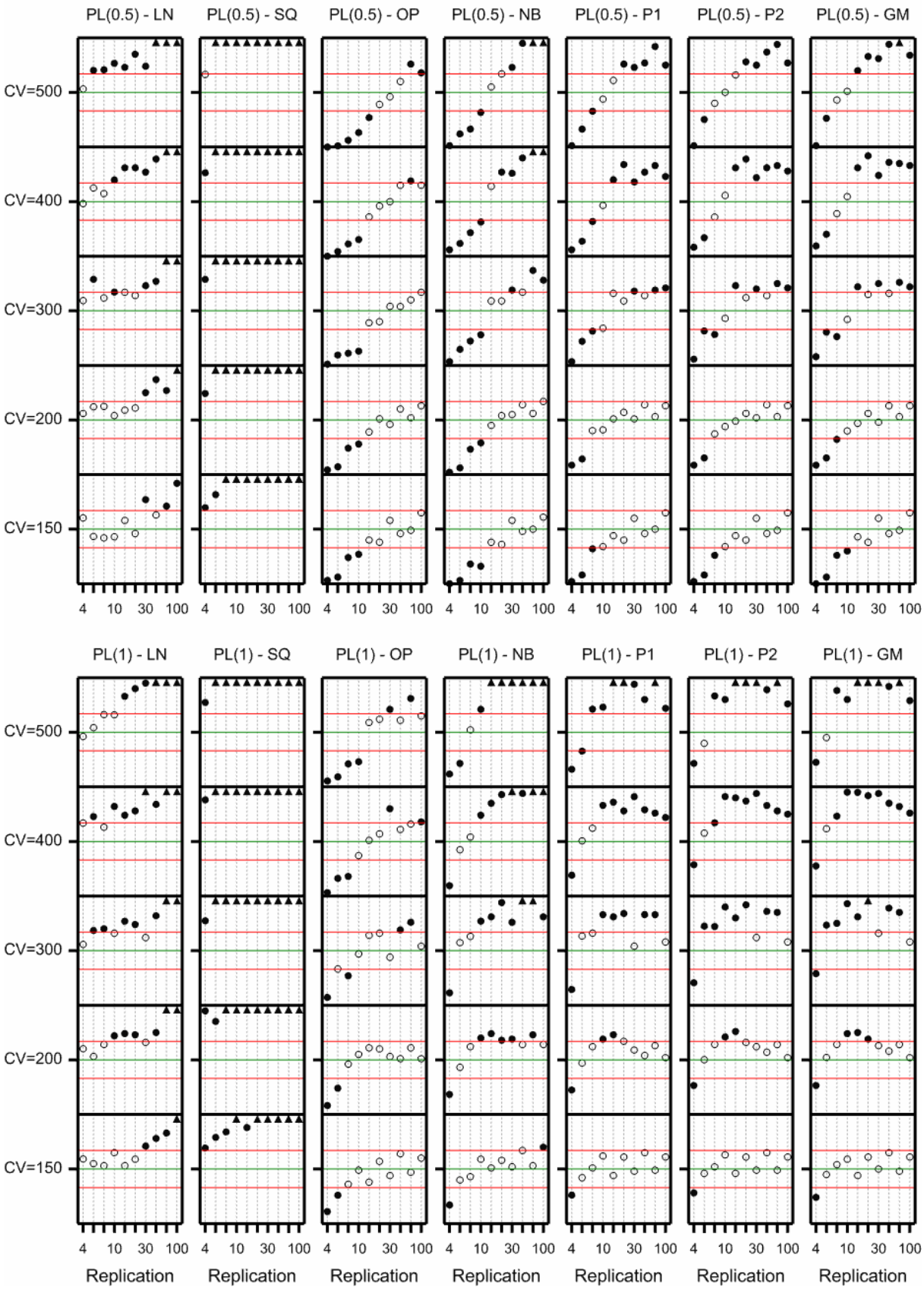
Appendix 2 B11: Size of equivalence test for Negative Binomial; LOC = Q = 0.25



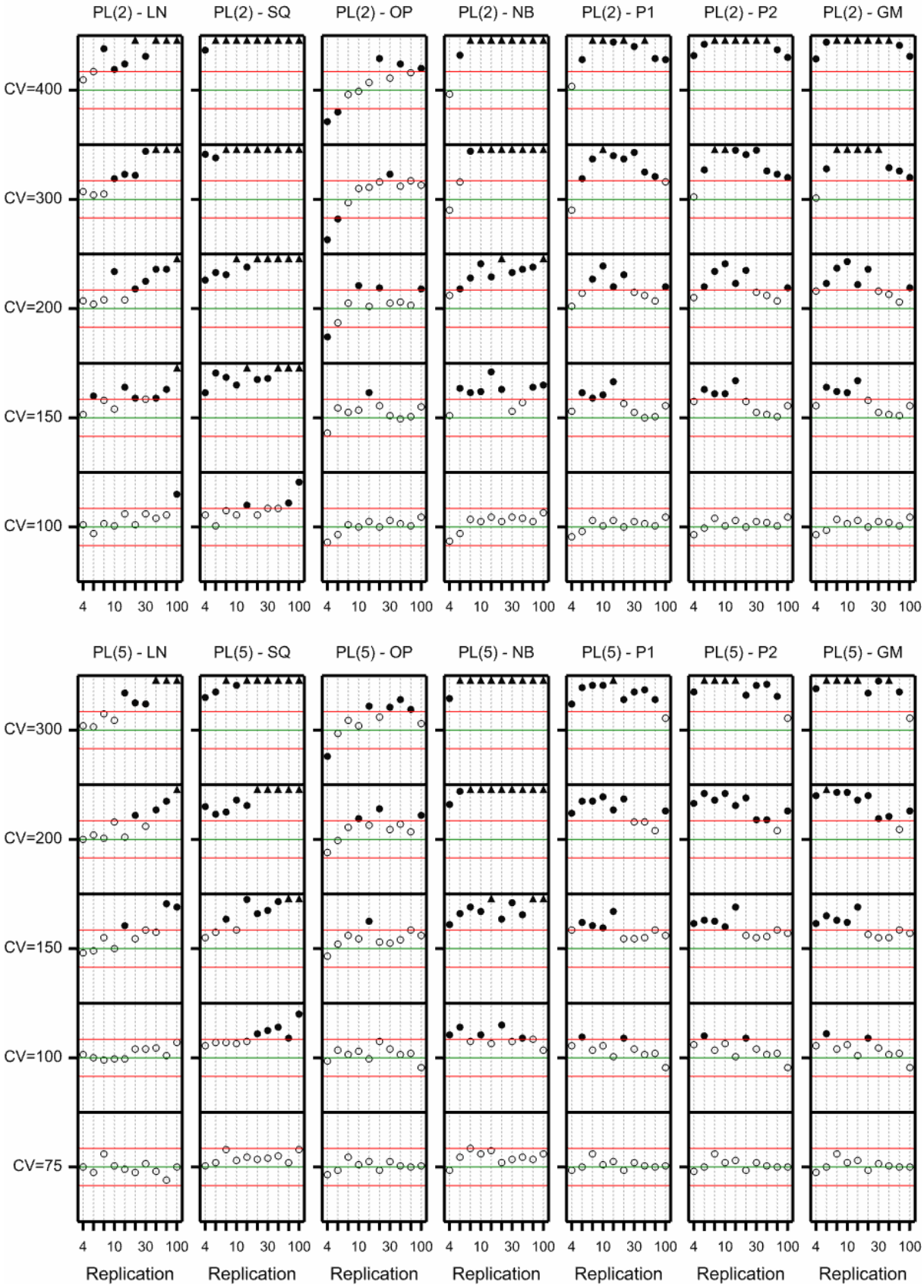
Appendix 2 B12: Size of equivalence test for Negative Binomial; LOC = Q = 0.25



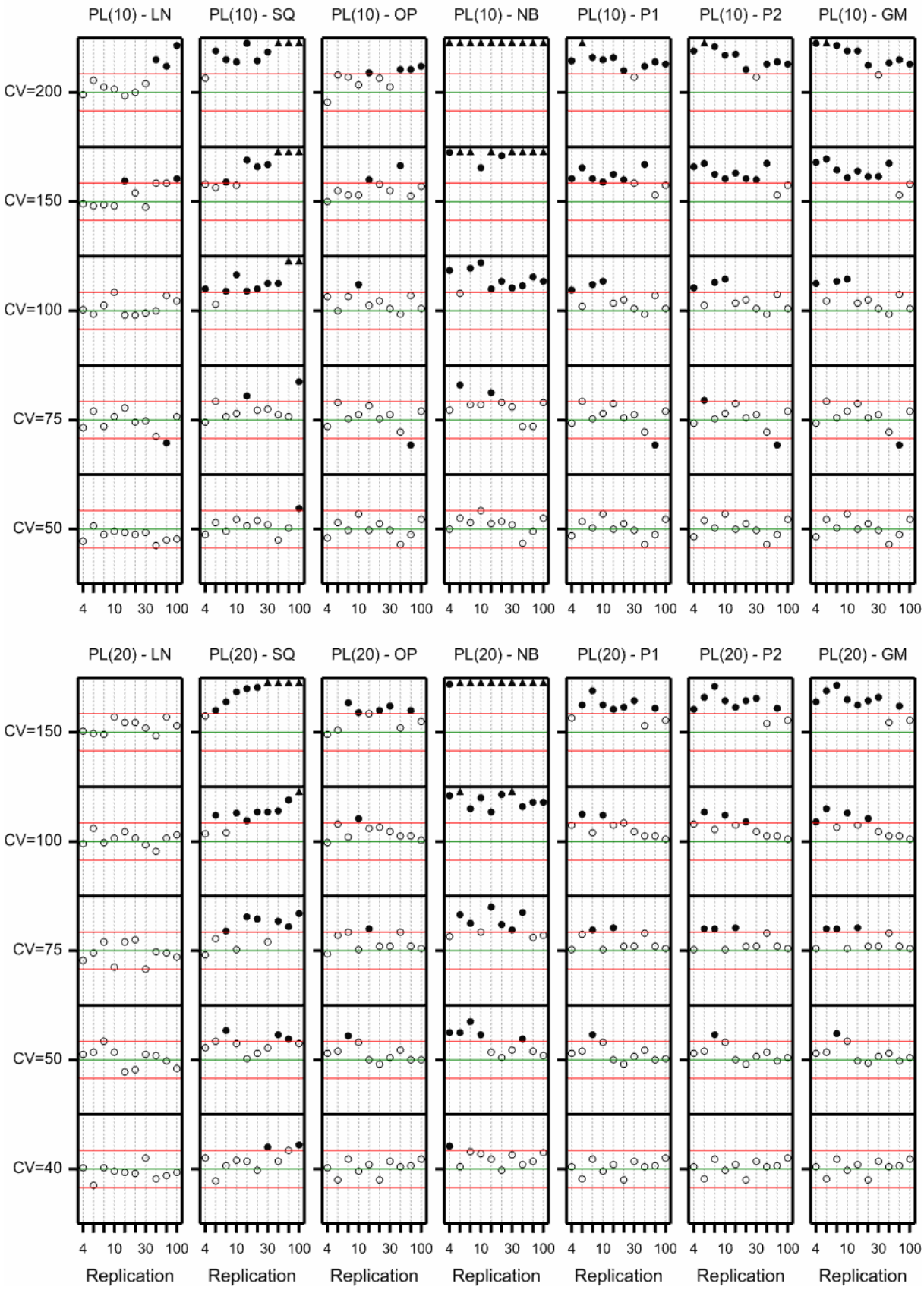
Appendix 2 C1: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.75



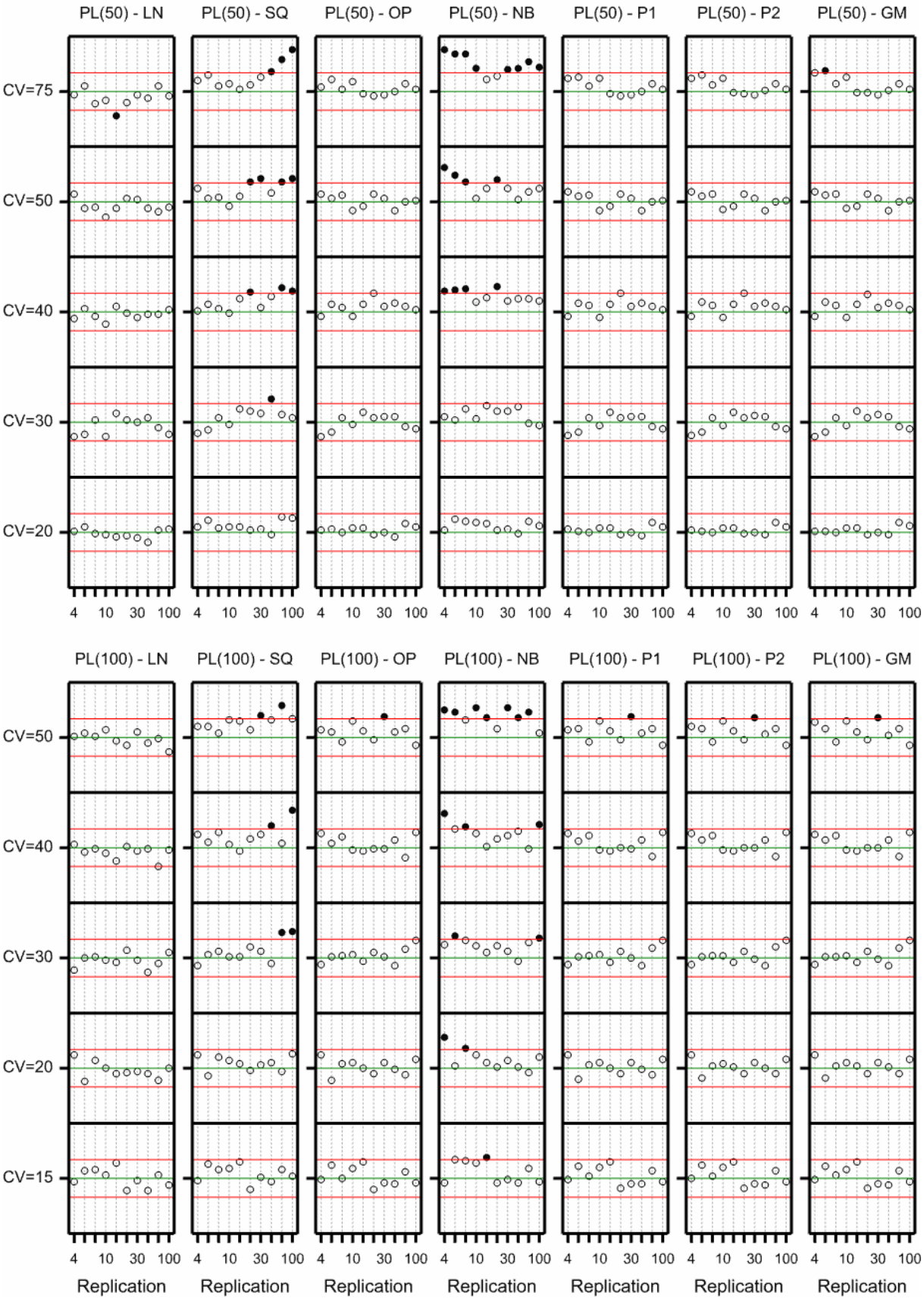
Appendix 2 C2: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.75



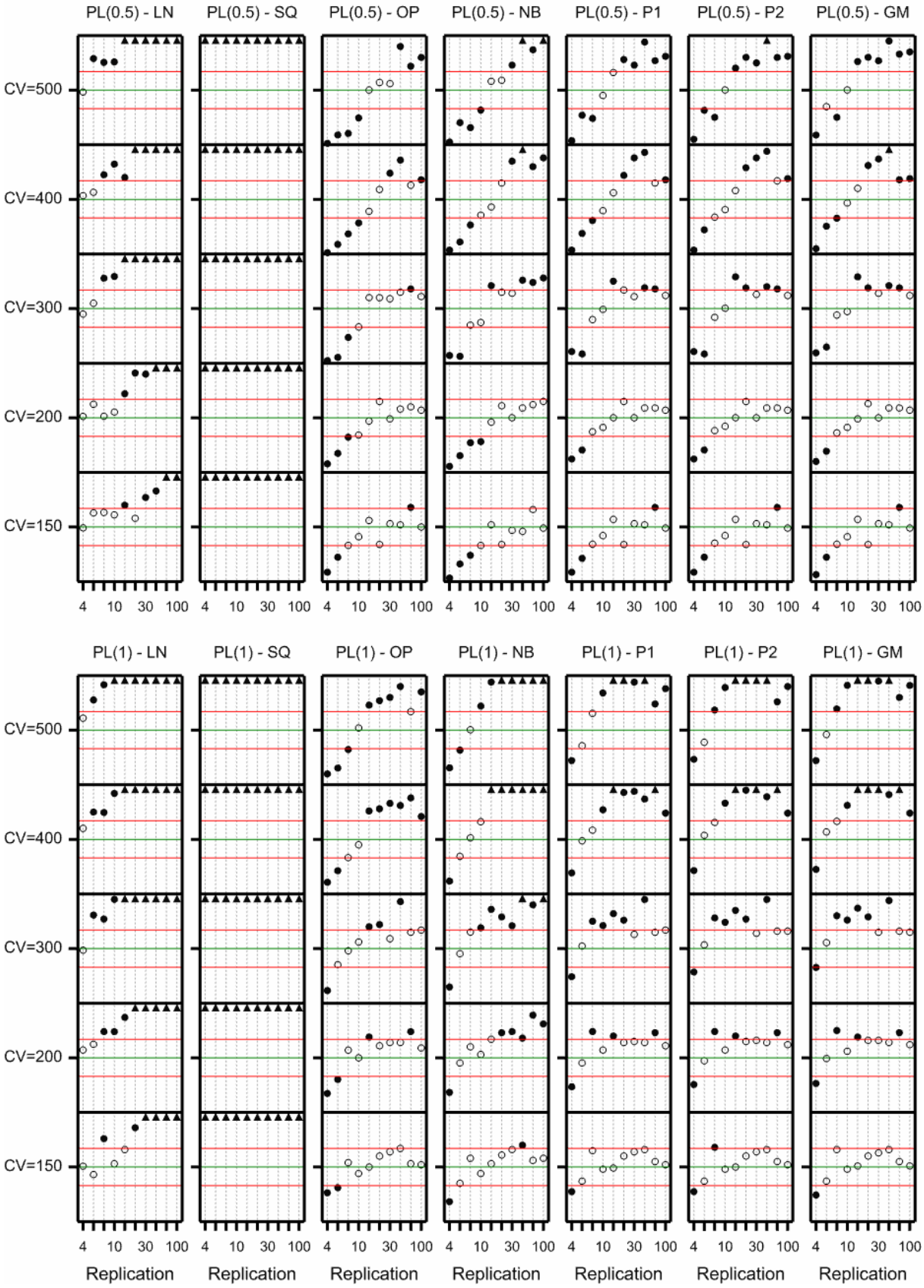
Appendix 2 C3: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.75



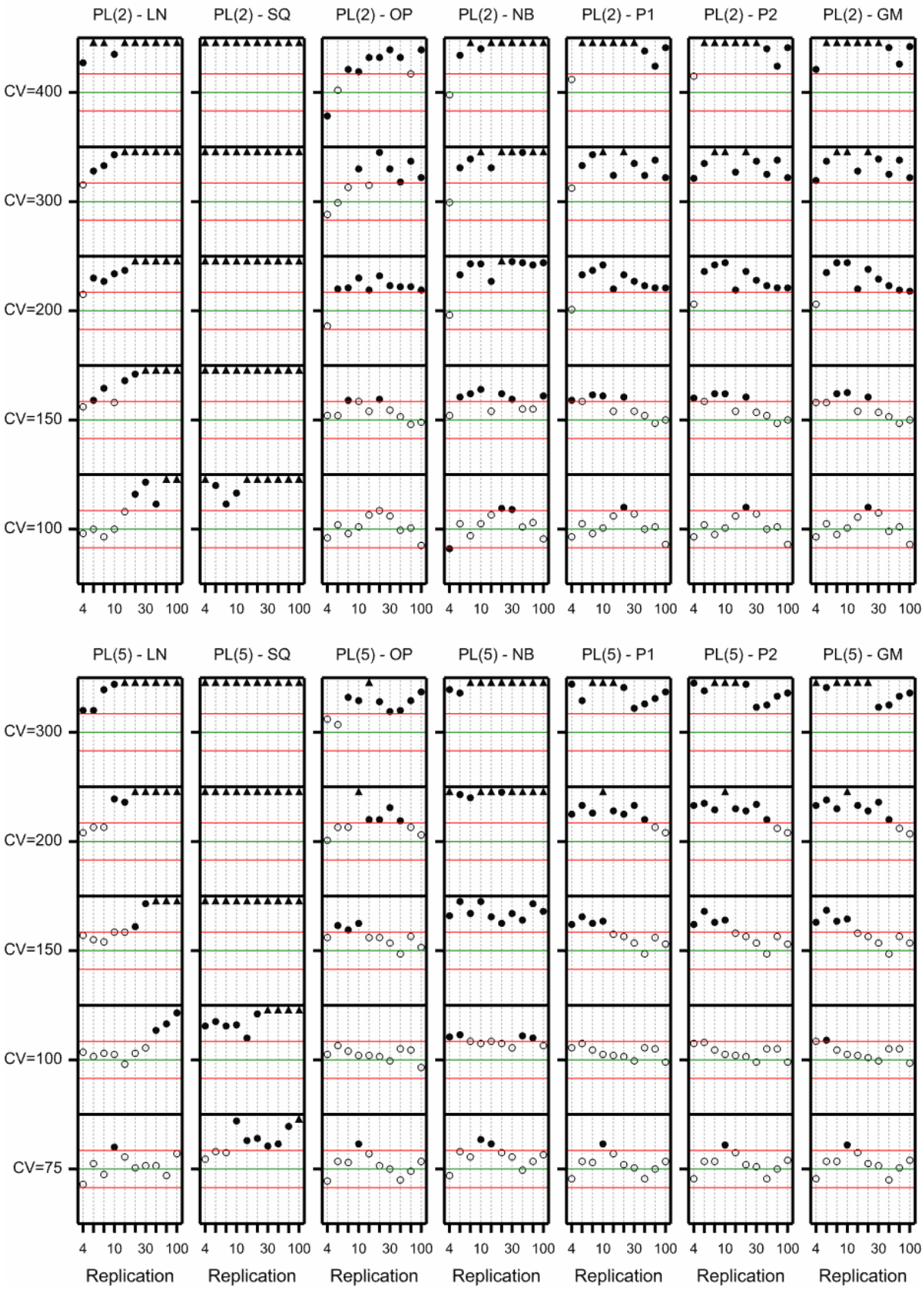
Appendix 2 C4: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.75



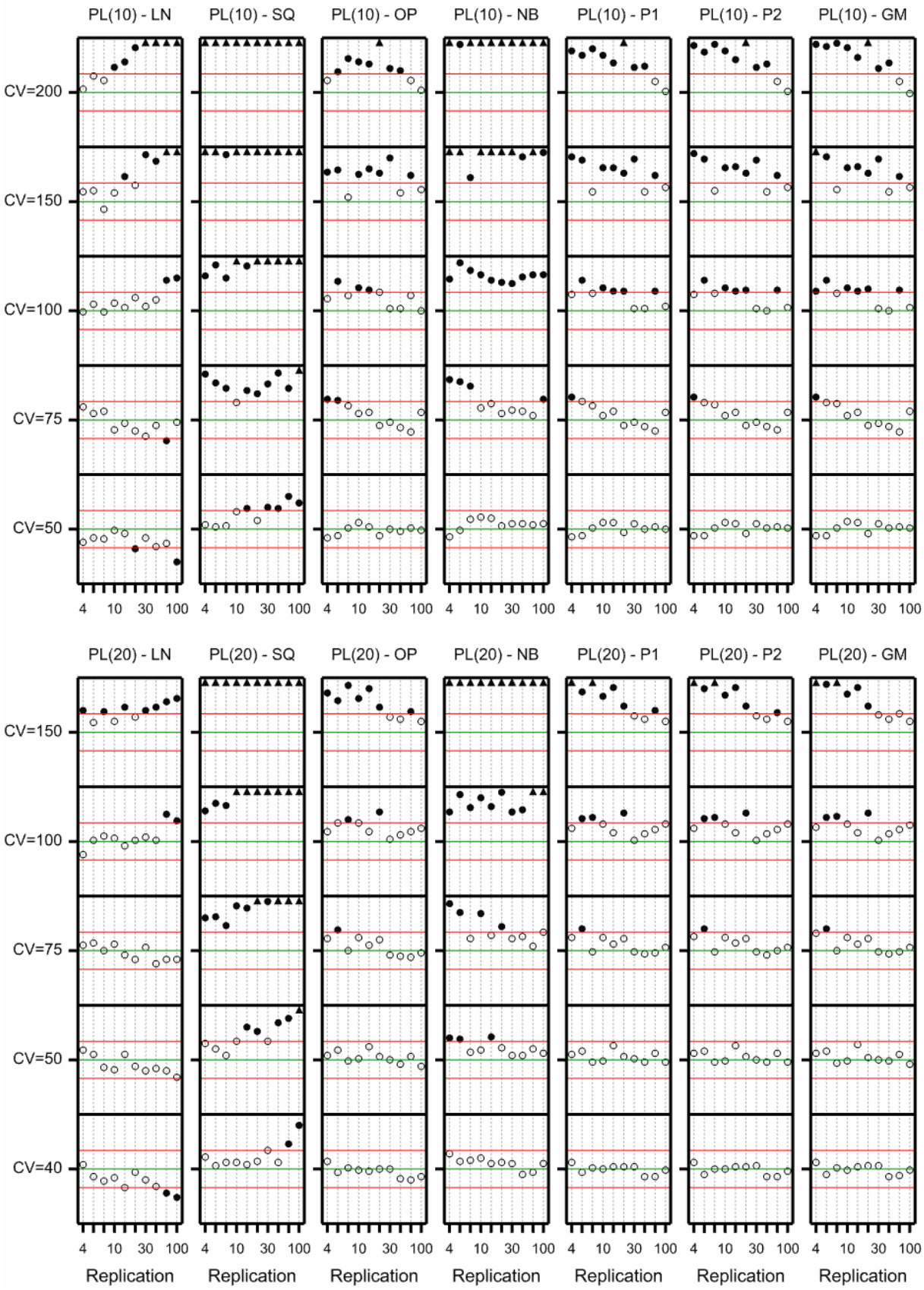
Appendix 2 C5: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.5



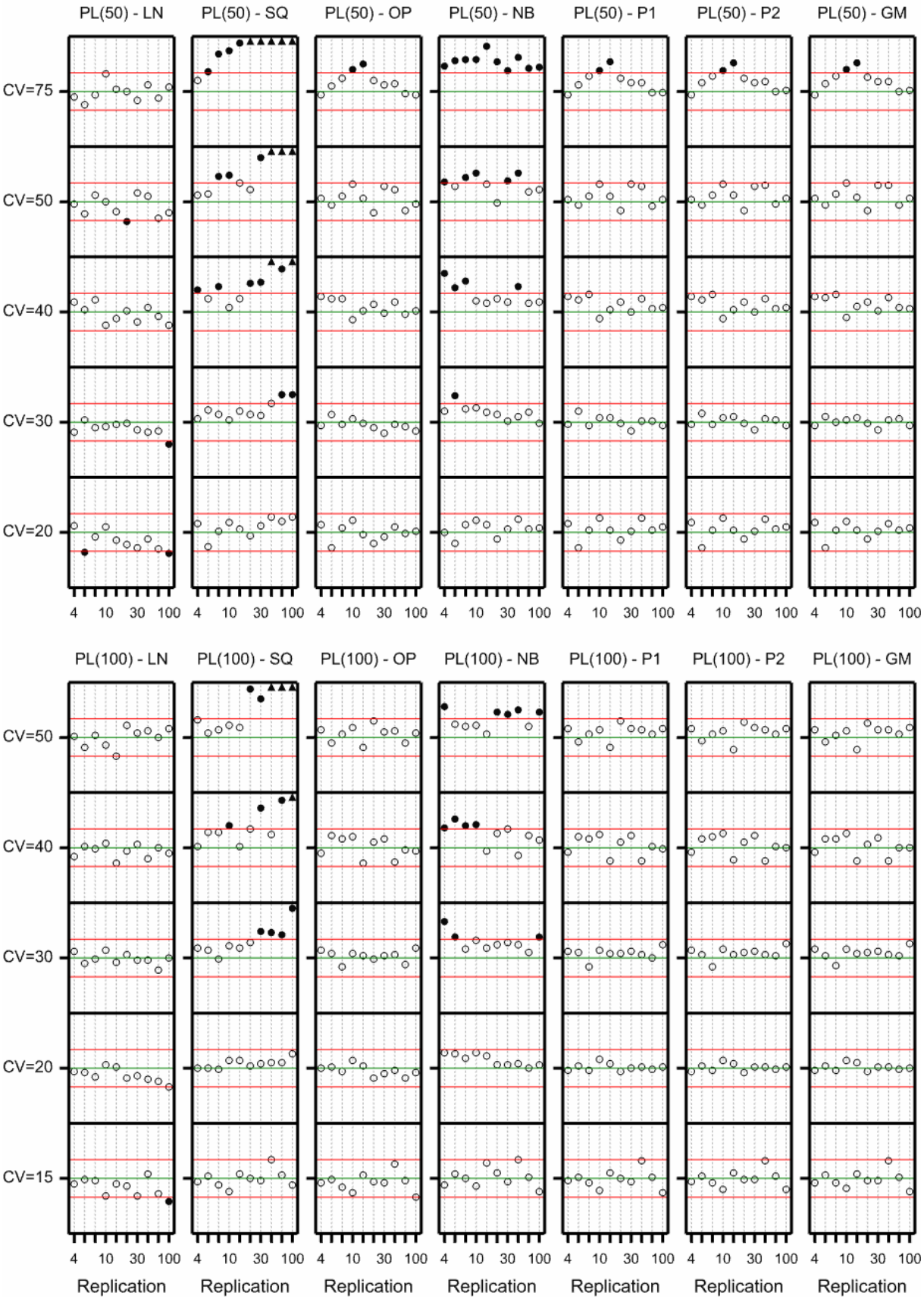
Appendix 2 C6: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.5



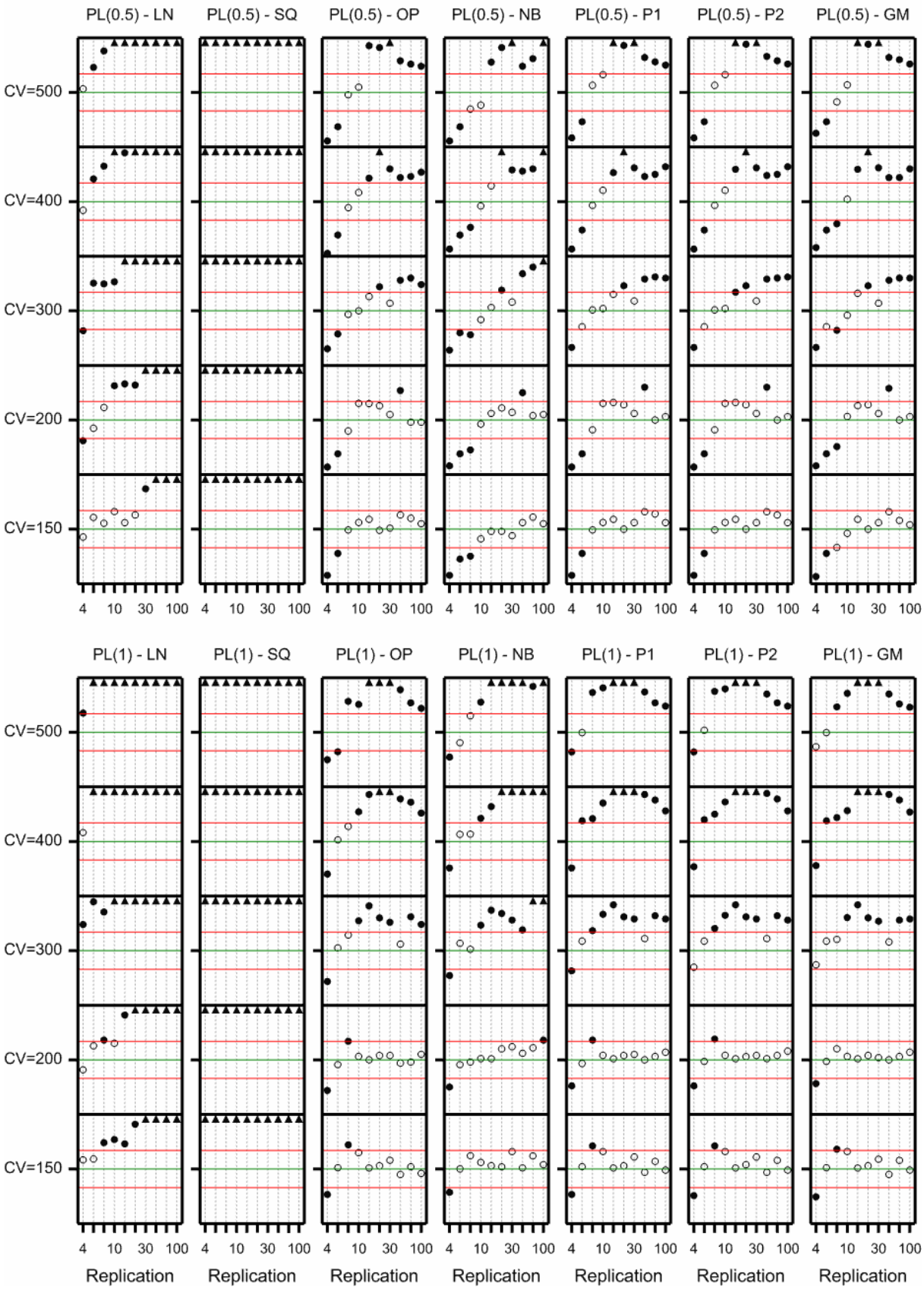
Appendix 2 C7: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.5



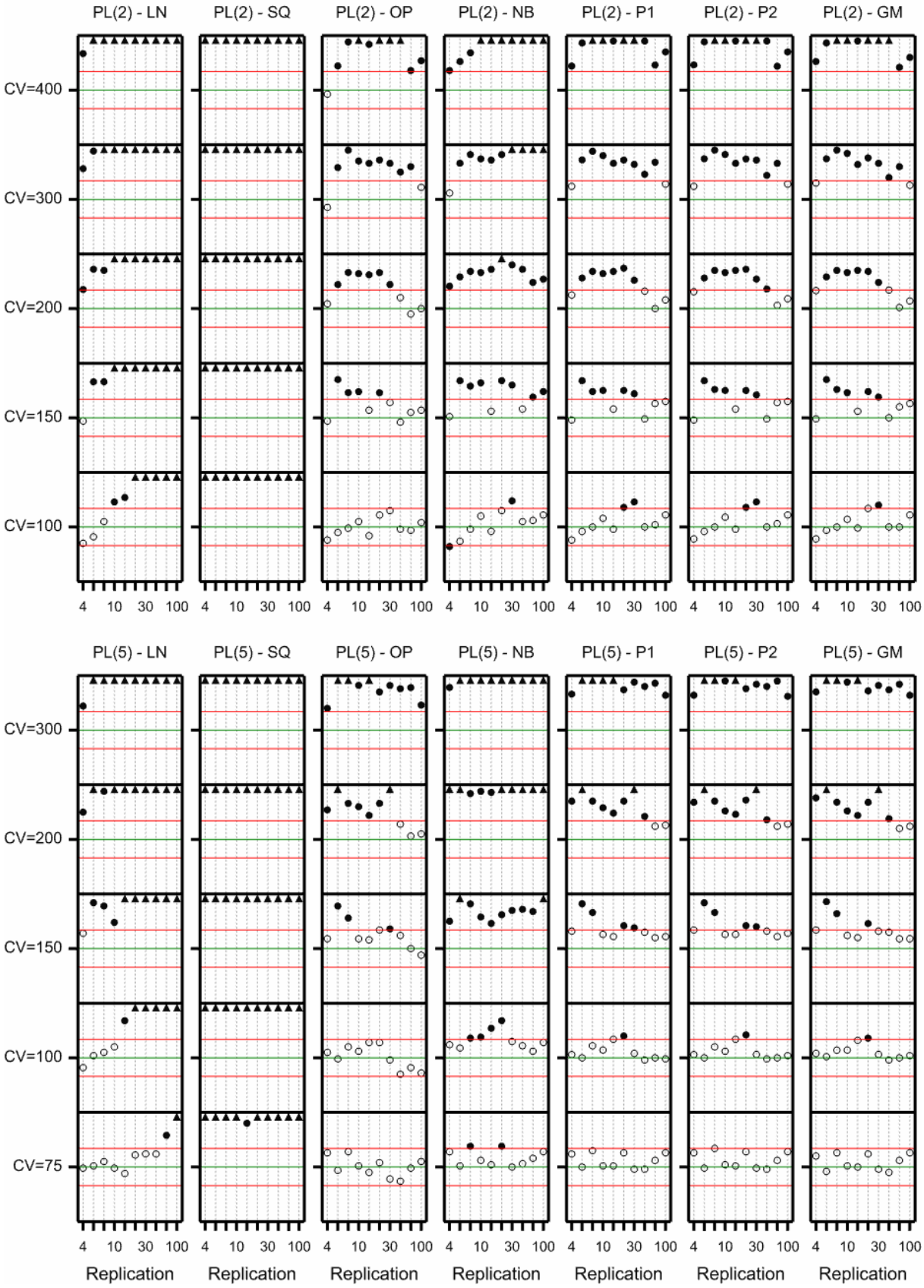
Appendix 2 C8: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.5



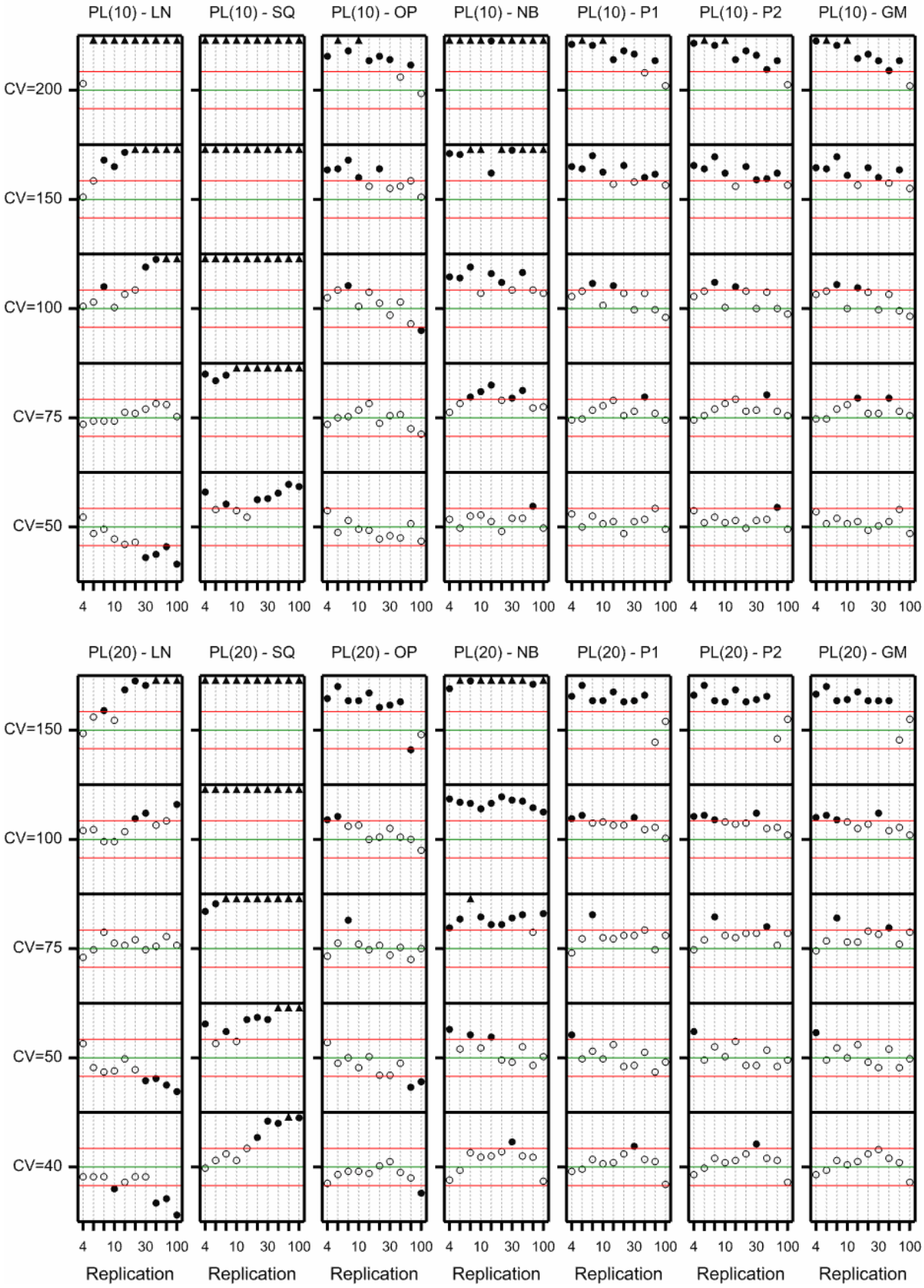
Appendix 2 C9: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.25



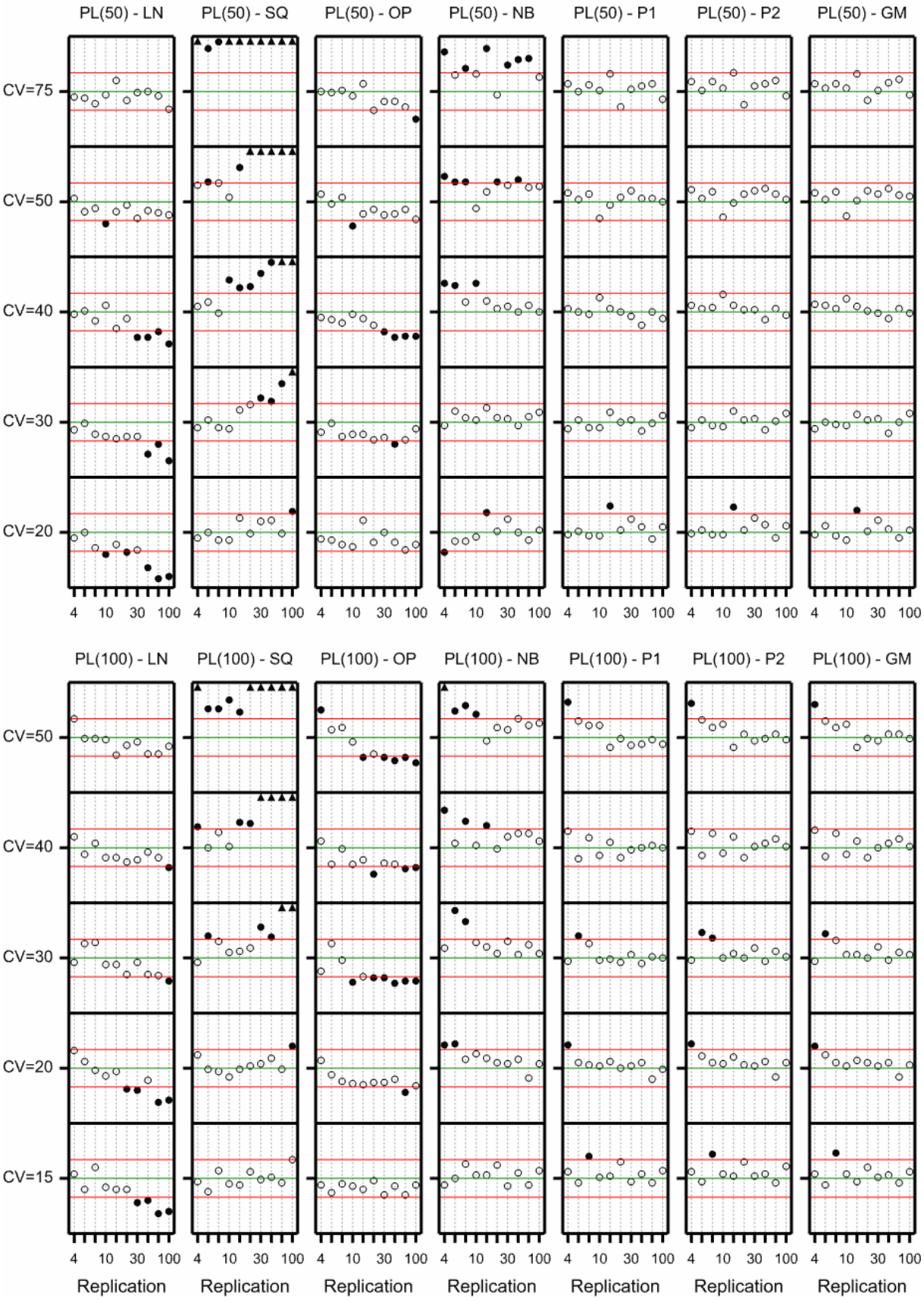
Appendix 2 C10: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.25

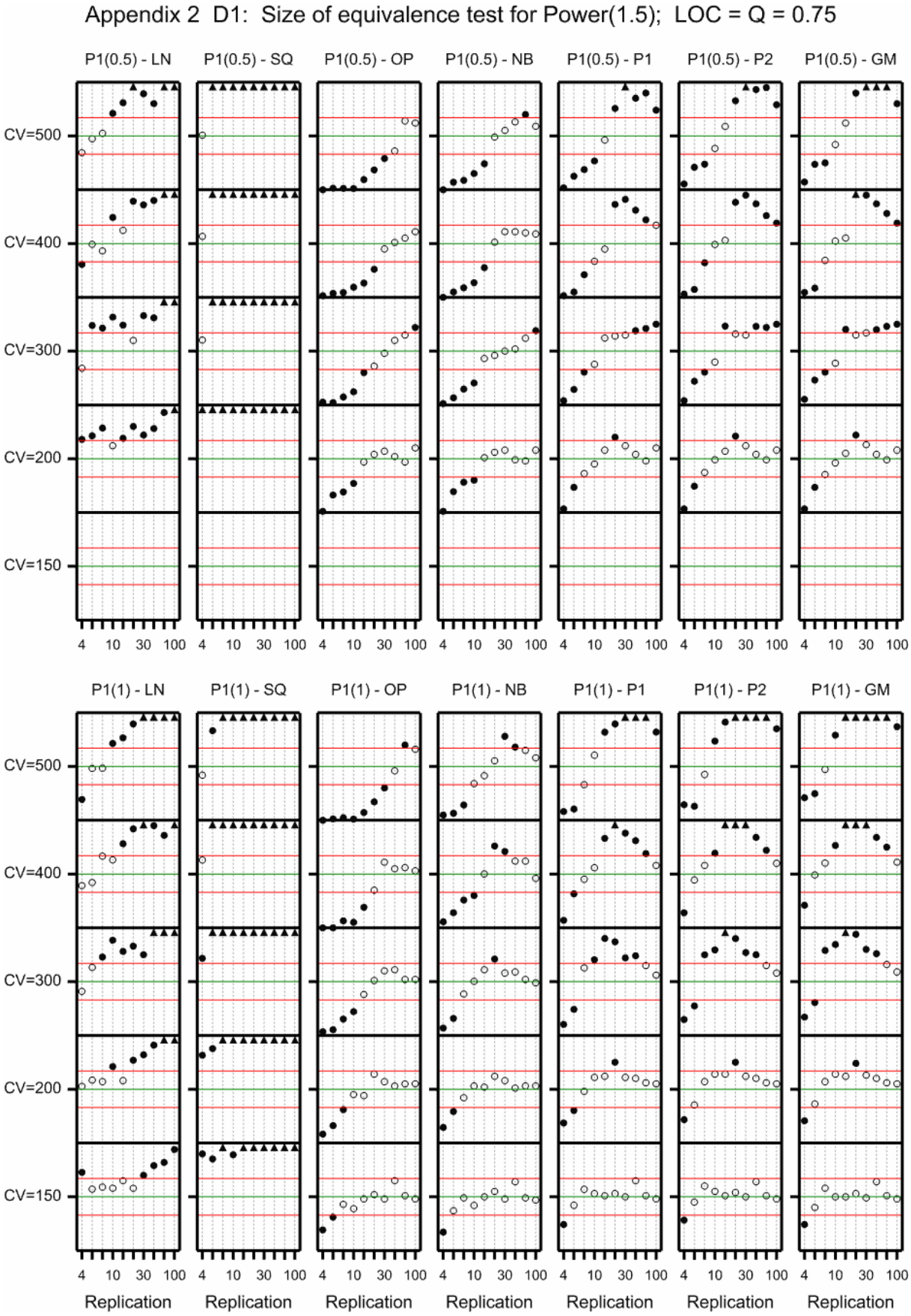


Appendix 2 C11: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.25

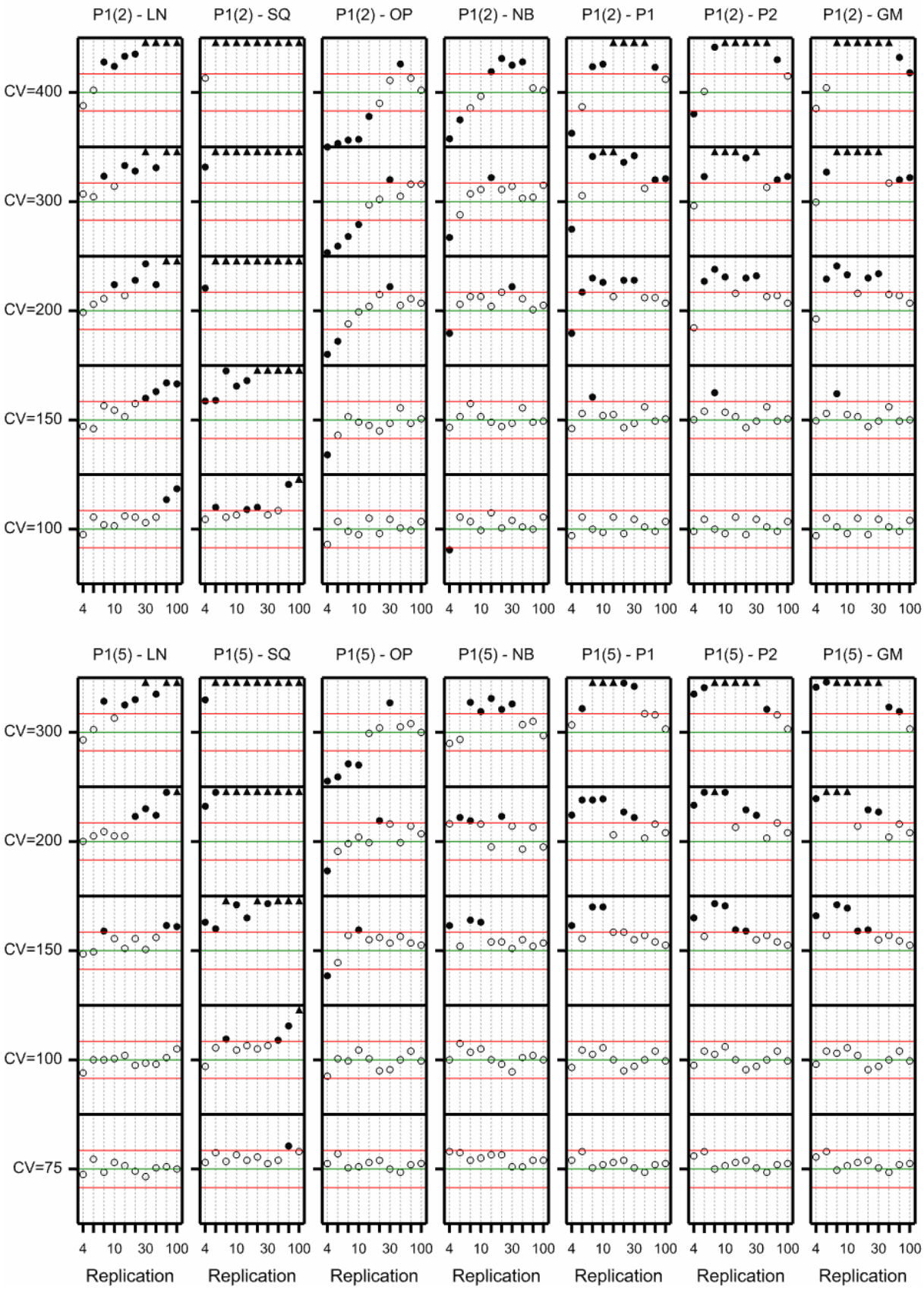


Appendix 2 C12: Size of equivalence test for Poisson-LogNormal; LOC = Q = 0.25

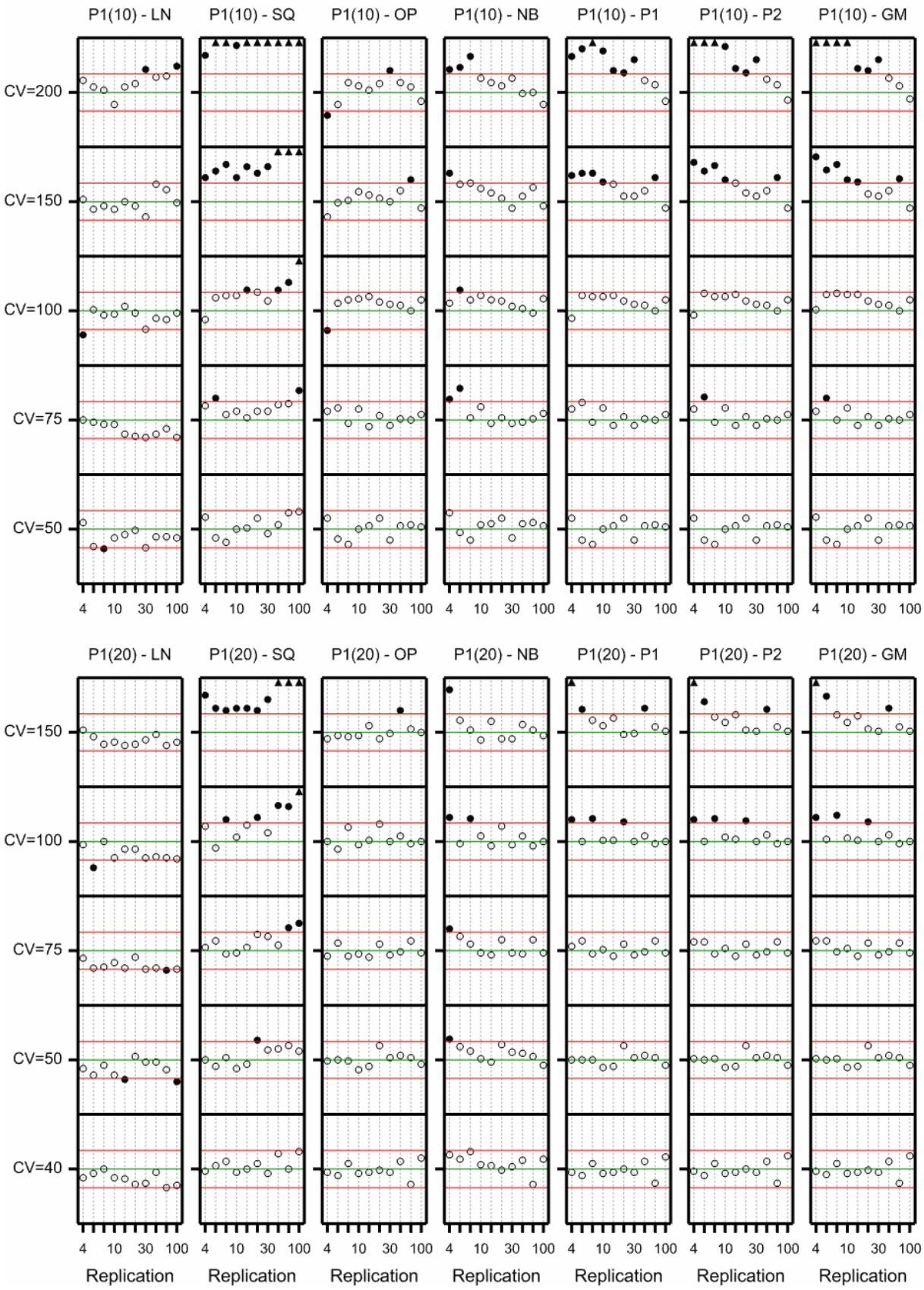



Appendix 2 D1: Size of equivalence test for Power(1.5); LOC = Q = 0.75
P1(0.5) - LN
P1(0.5) - SQ
P1(0.5) - OP
P1(0.5) - NB
P1(0.5) - P1
P1(0.5) - P2
P1(0.5) - GM
P1(1) - LN
P1(1) - SQ
P1(1) - OP
P1(1) - NB
P1(1) - P1
P1(1) - P2
P1(1) - GM
CV=500
CV=400
CV=300
CV=200
CV=150
4 10 30 100
Replication

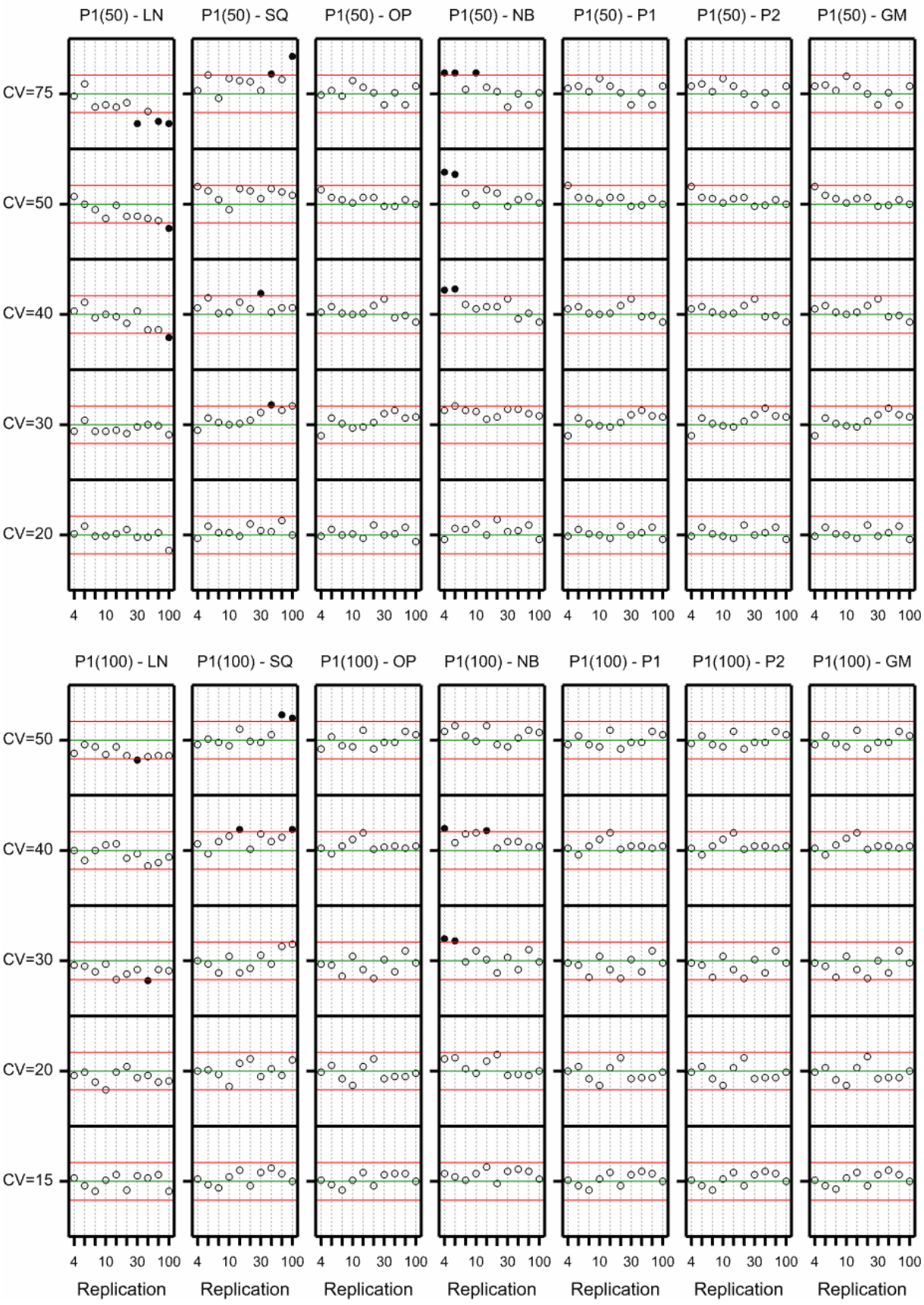
Appendix 2 D2: Size of equivalence test for Power(1.5); LOC = Q = 0.75



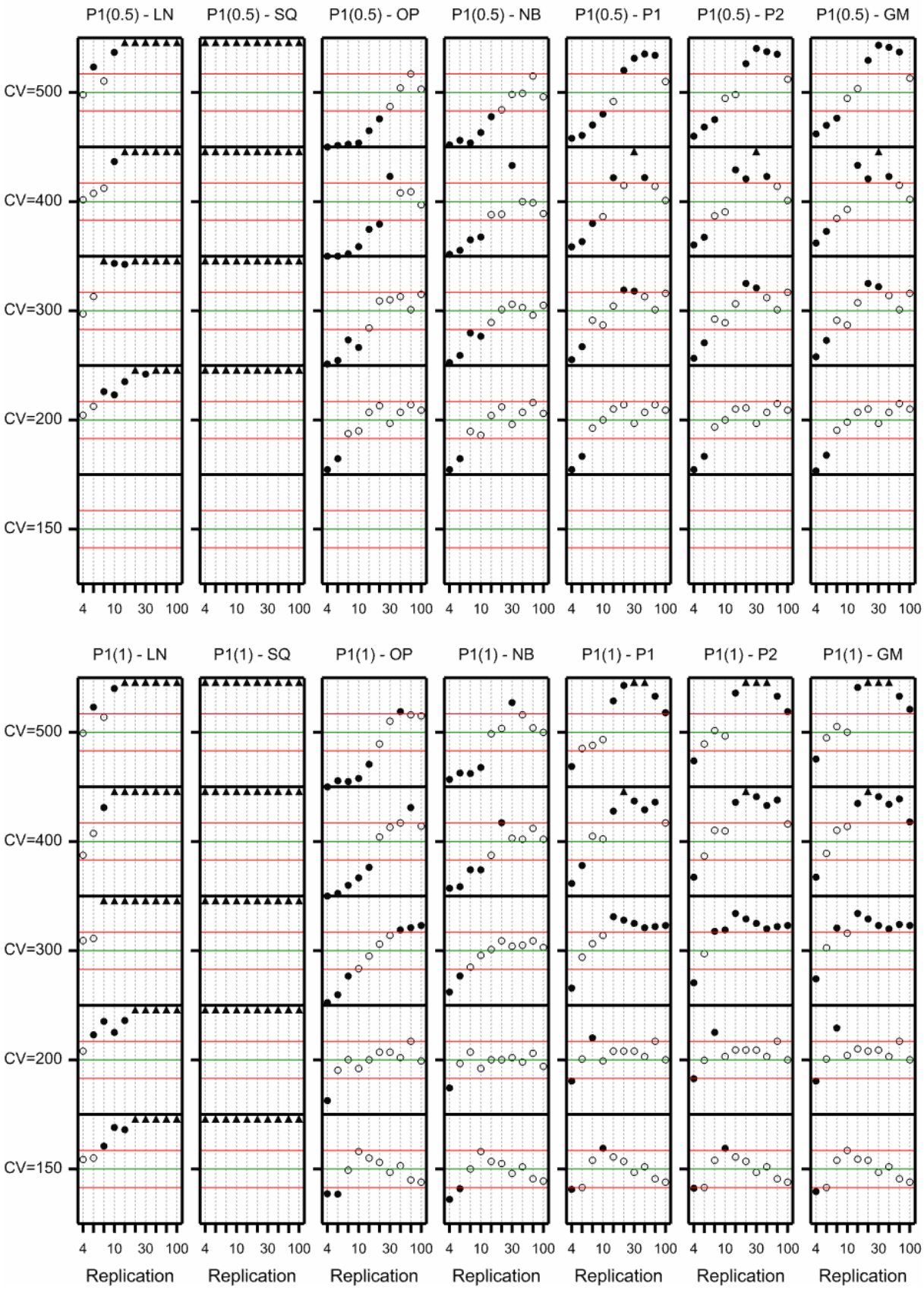
Appendix 2 D3: Size of equivalence test for Power(1.5); LOC = Q = 0.75



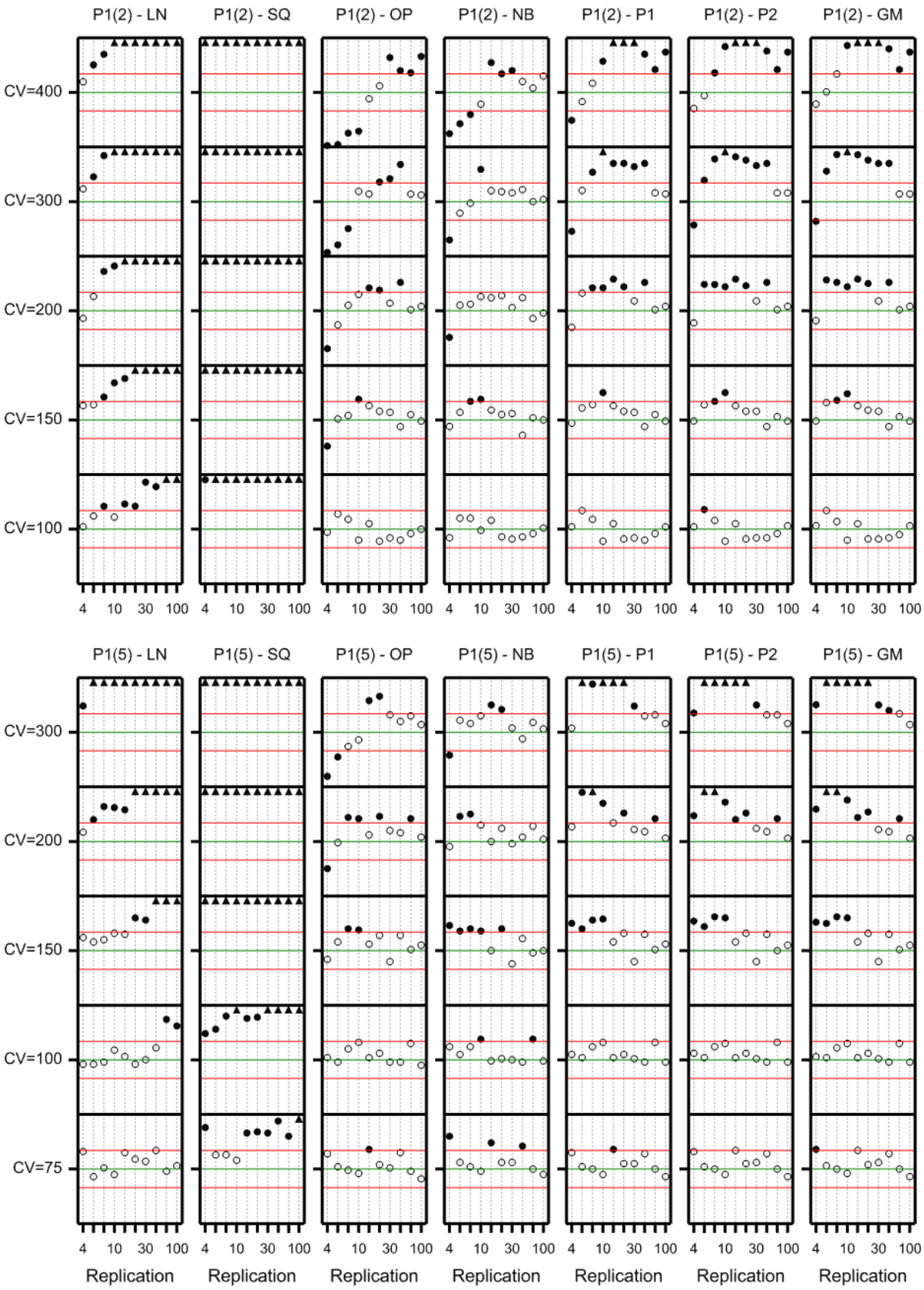
Appendix 2 D4: Size of equivalence test for Power(1.5); LOC = Q = 0.75

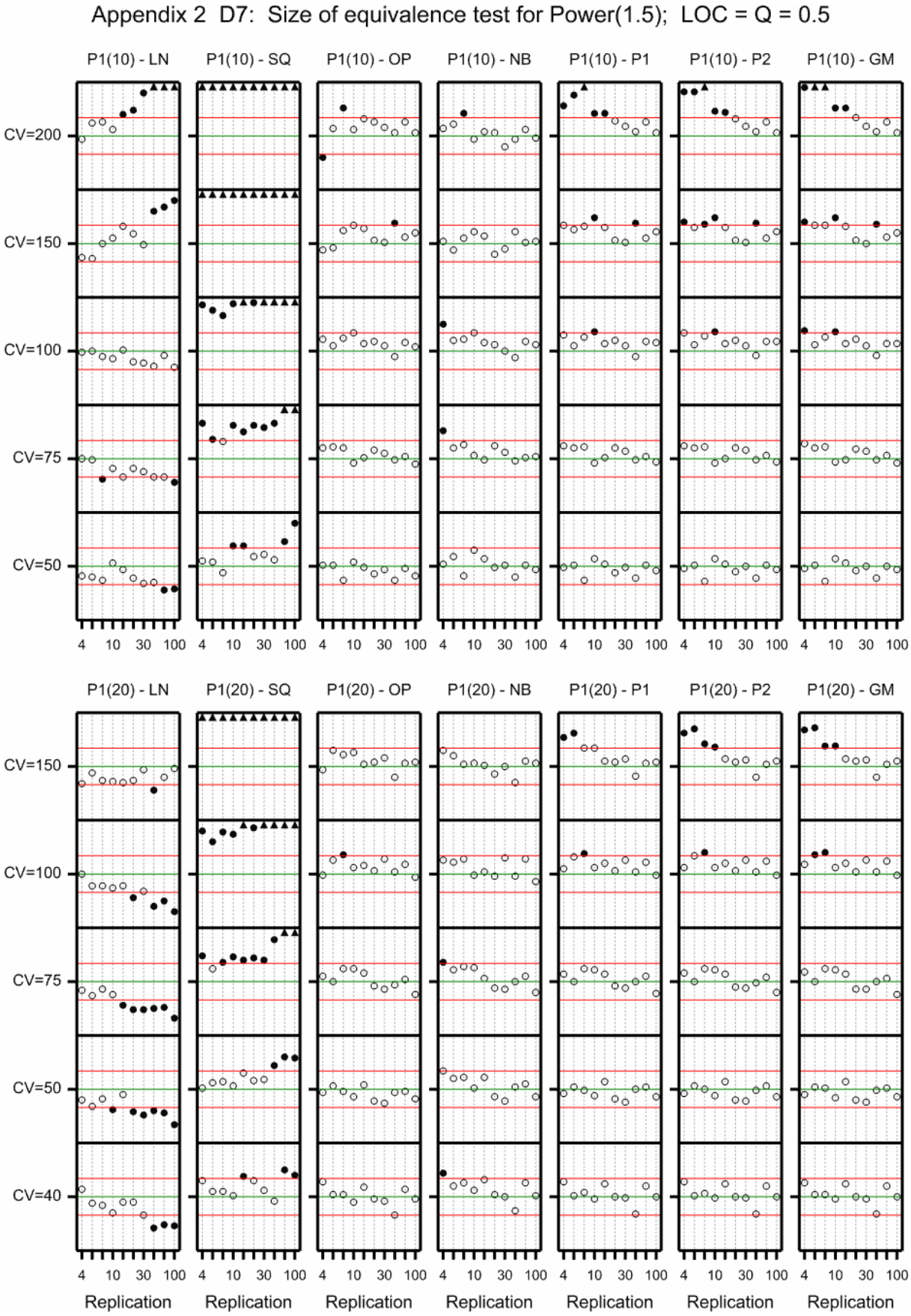


Appendix 2 D5: Size of equivalence test for Power(1.5); LOC = Q = 0.5

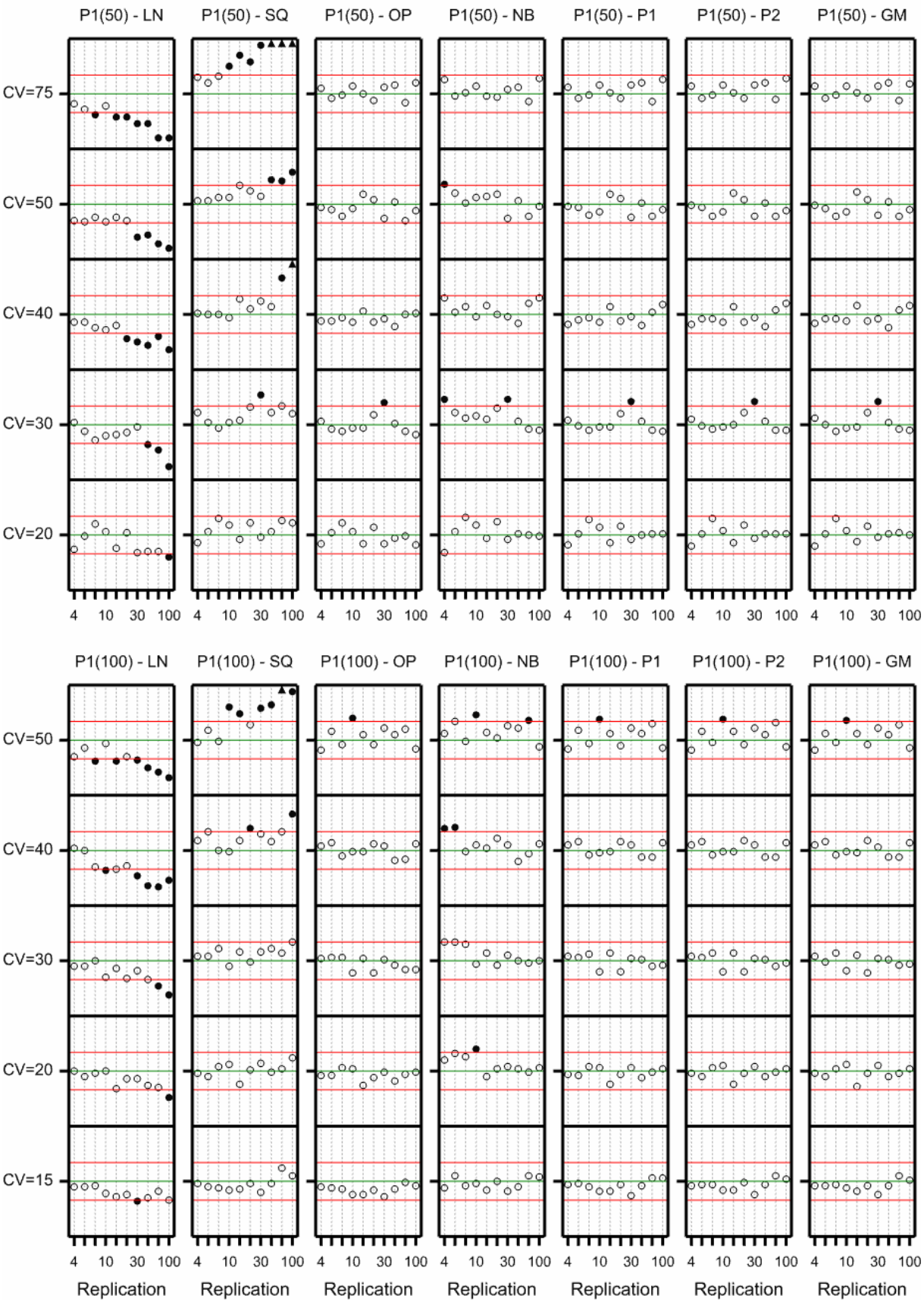


Appendix 2 D6: Size of equivalence test for Power(1.5); LOC = Q = 0.5

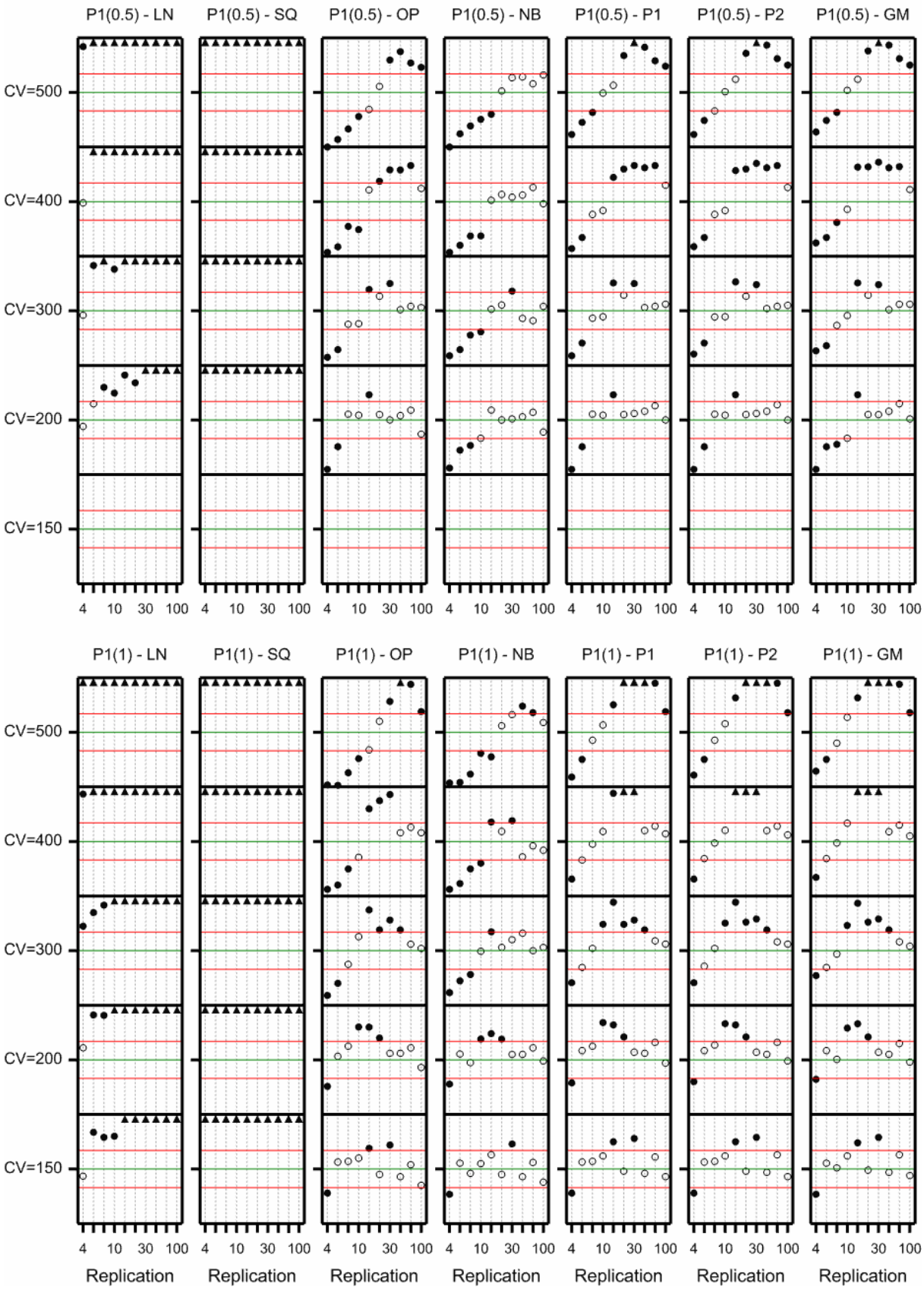



Appendix 2 D7: Size of equivalence test for Power(1.5); LOC = Q = 0.5
P1(10) - LN
P1(10) - SQ
P1(10) - OP
P1(10) - NB
P1(10) - P1
P1(10) - P2
P1(10) - GM
CV=200
CV=150
CV=100
CV=75
CV=50
P1(20) - LN
P1(20) - SQ
P1(20) - OP
P1(20) - NB
P1(20) - P1
P1(20) - P2
P1(20) - GM
CV=150
CV=100
CV=75
CV=50
CV=40
4 10 30 100
Replication

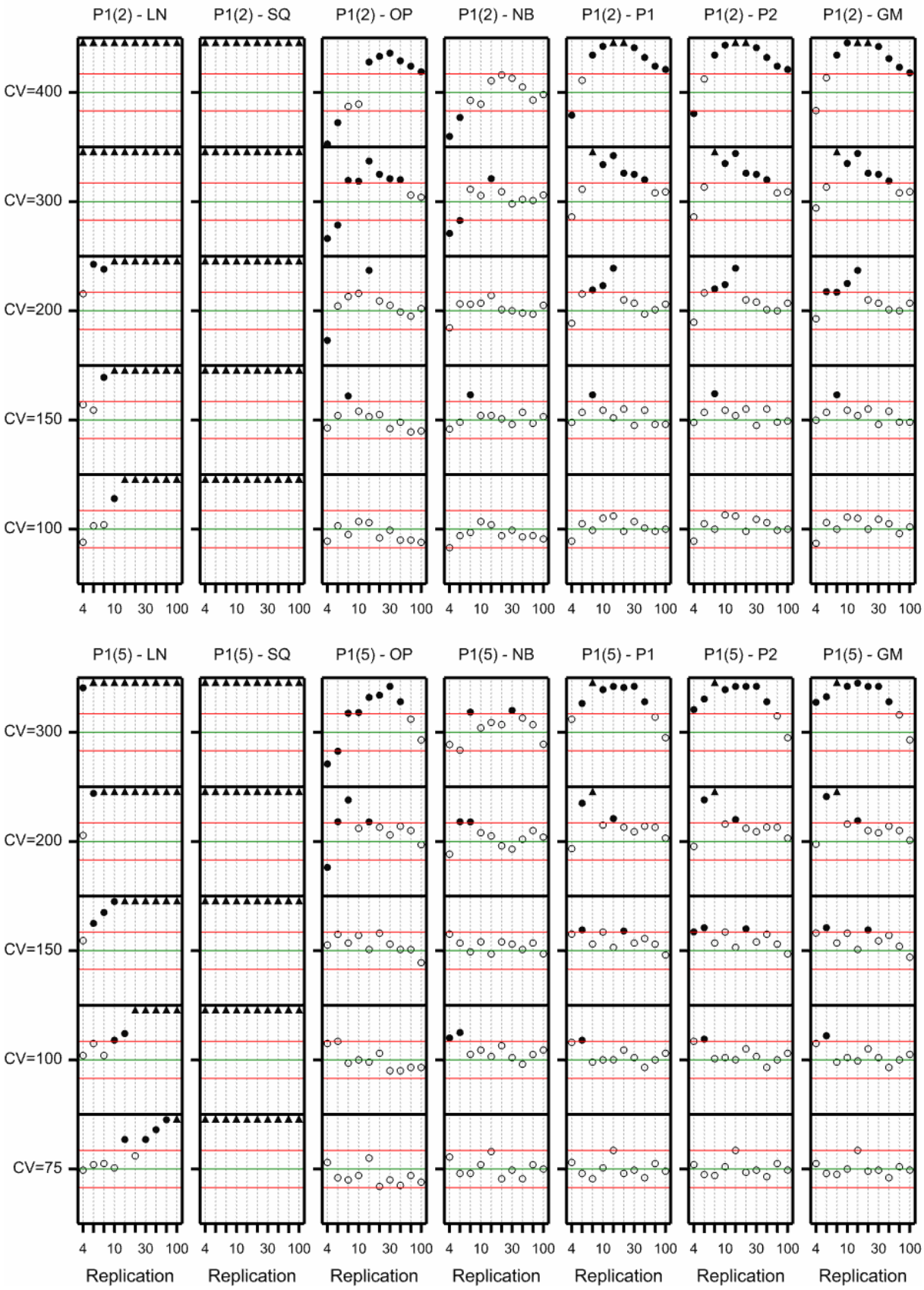
Appendix 2 D8: Size of equivalence test for Power(1.5); LOC = Q = 0.5



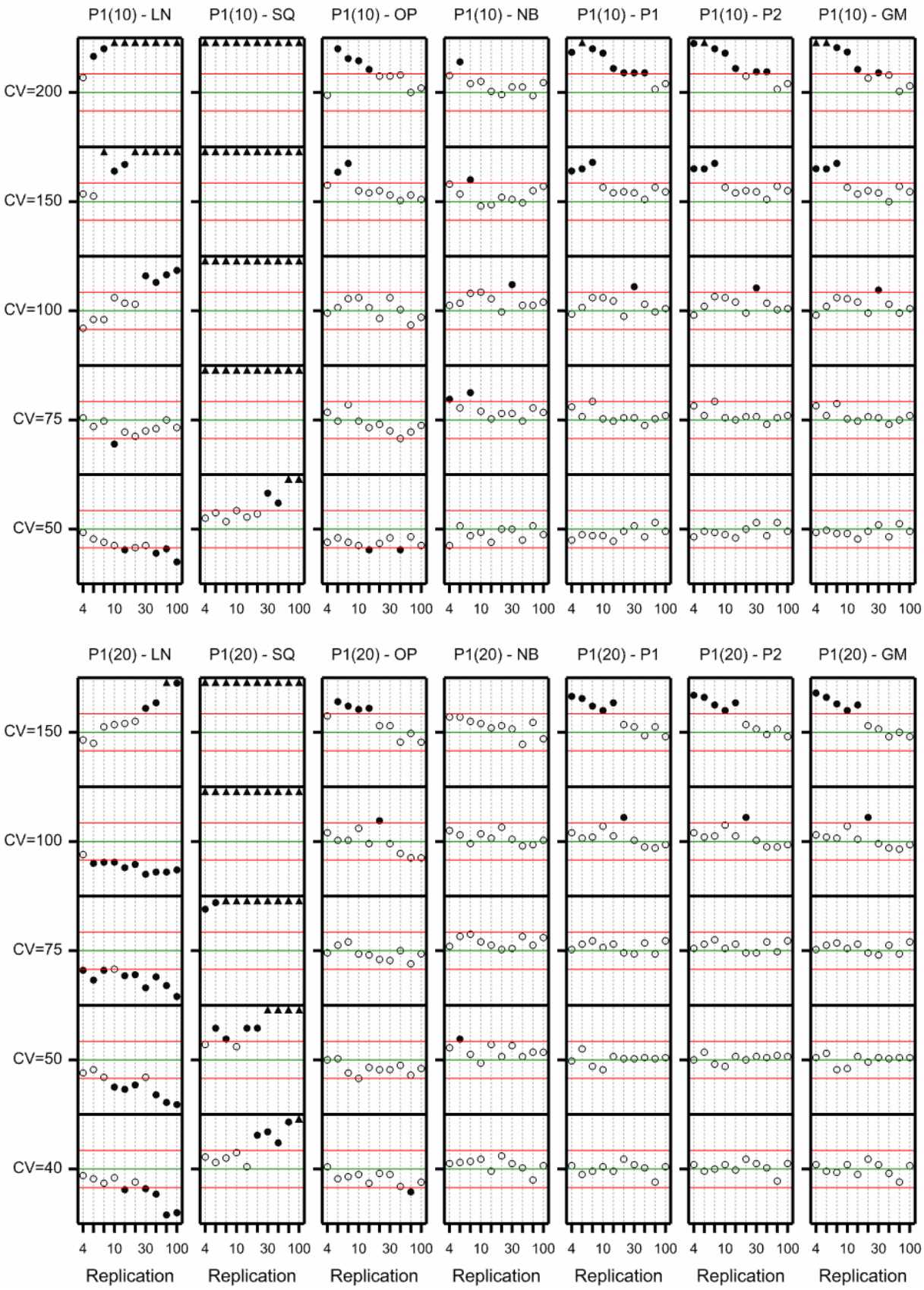
Appendix 2 D9: Size of equivalence test for Power(1.5); LOC = Q = 0.25



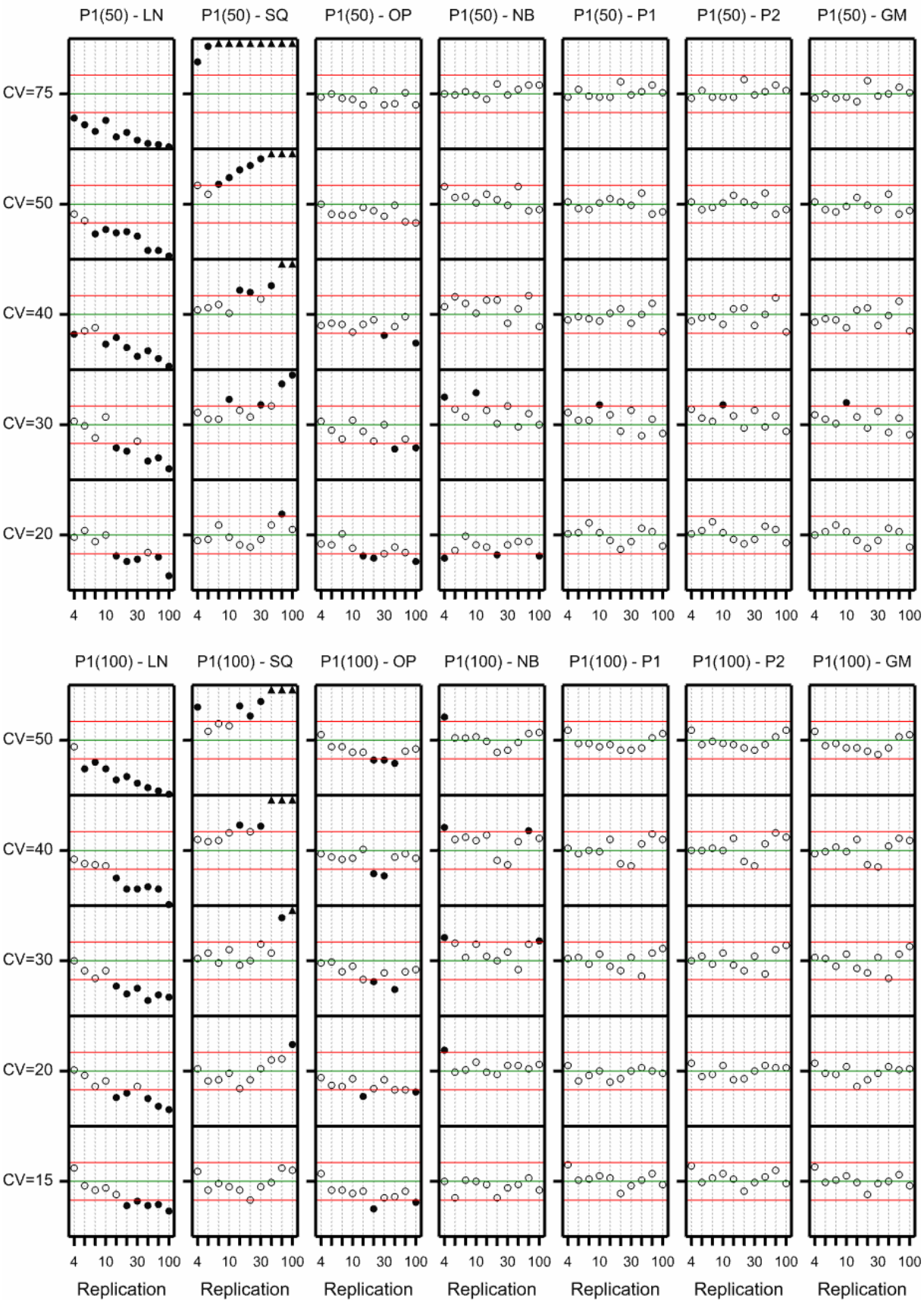
Appendix 2 D10: Size of equivalence test for Power(1.5); LOC = Q = 0.25



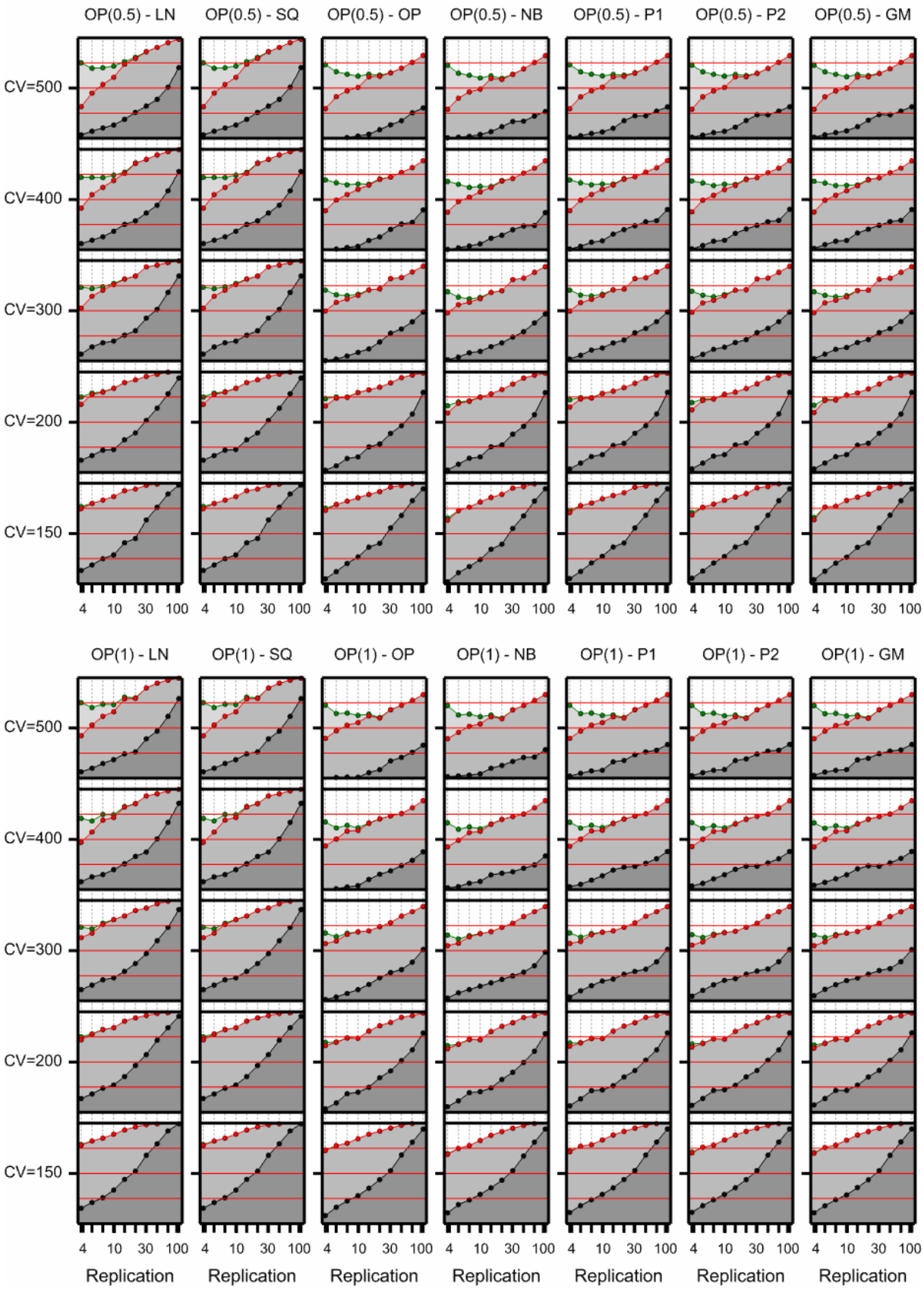
Appendix 2 D11: Size of equivalence test for Power(1.5); LOC = Q = 0.25



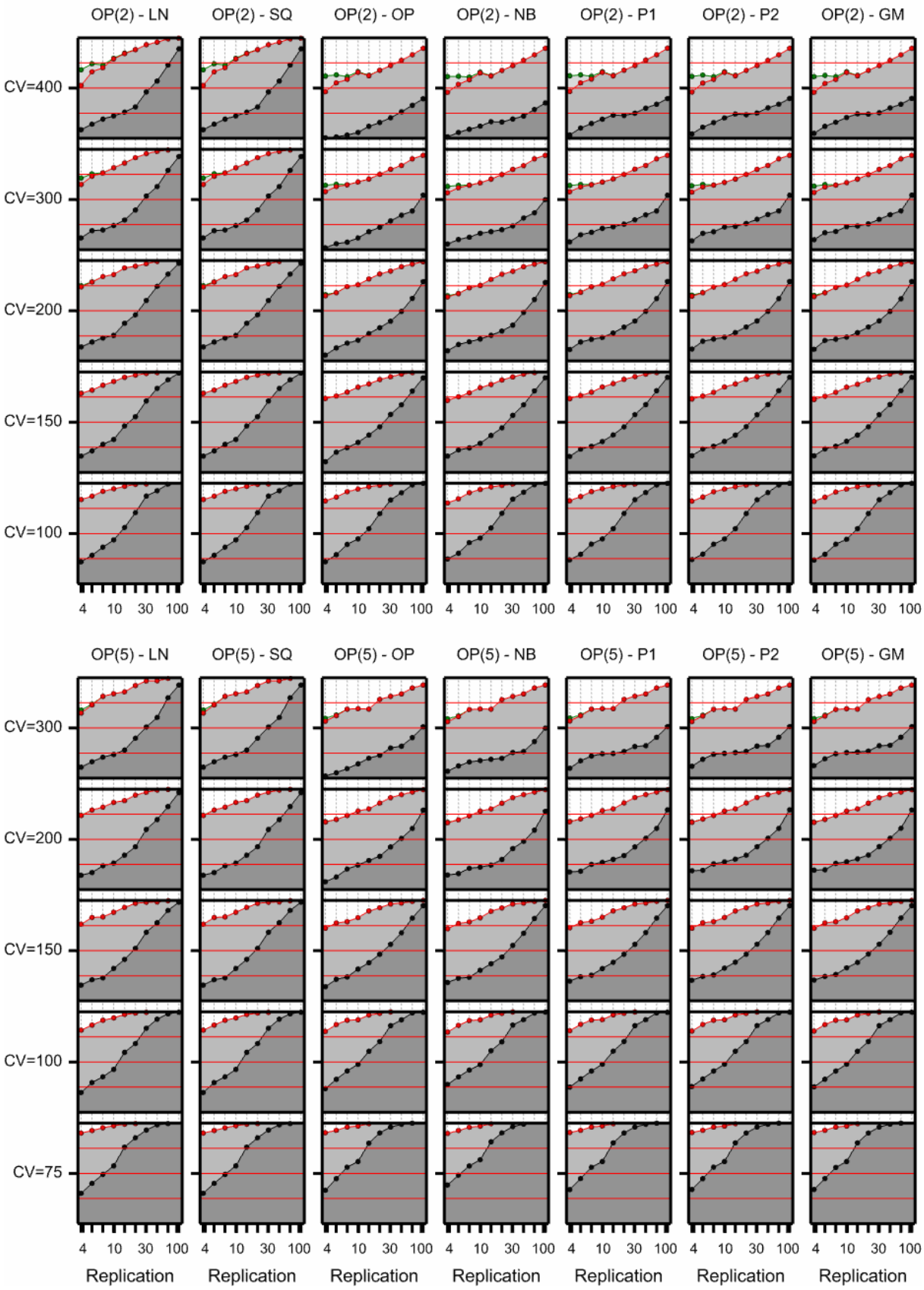
Appendix 2 D12: Size of equivalence test for Power(1.5); LOC = Q = 0.25



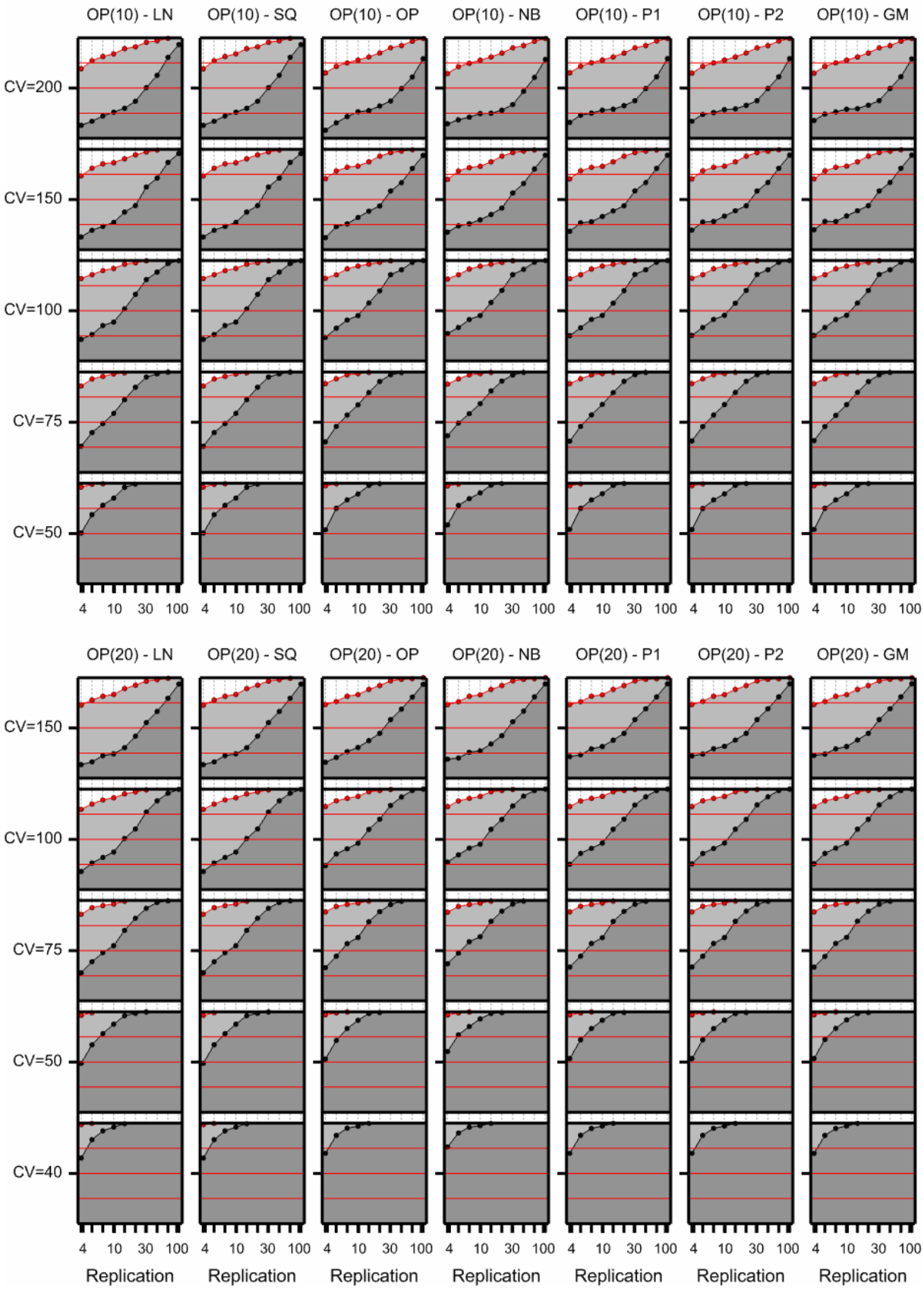
Appendix 2 E1: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 1



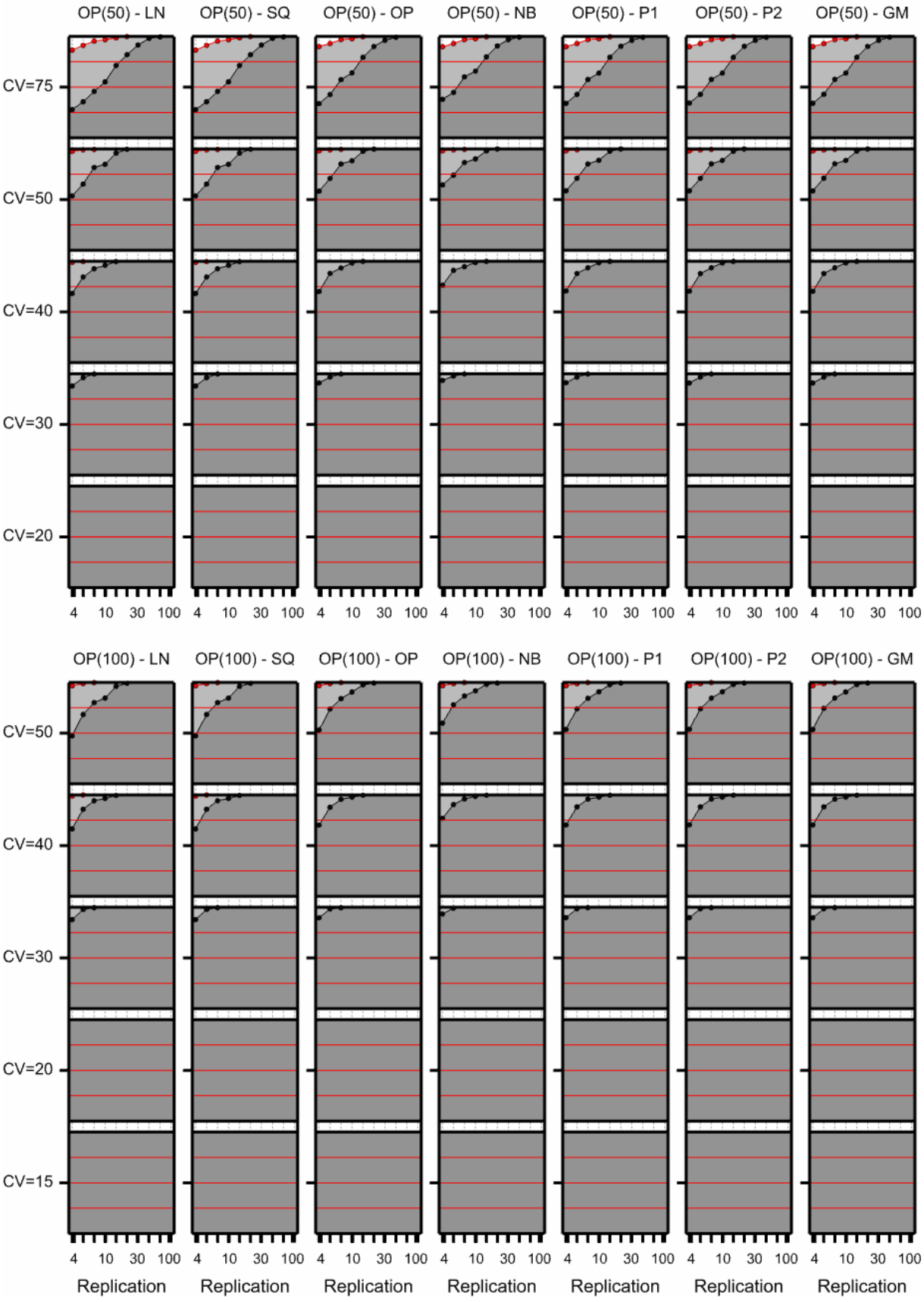
Appendix 2 E2: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 1



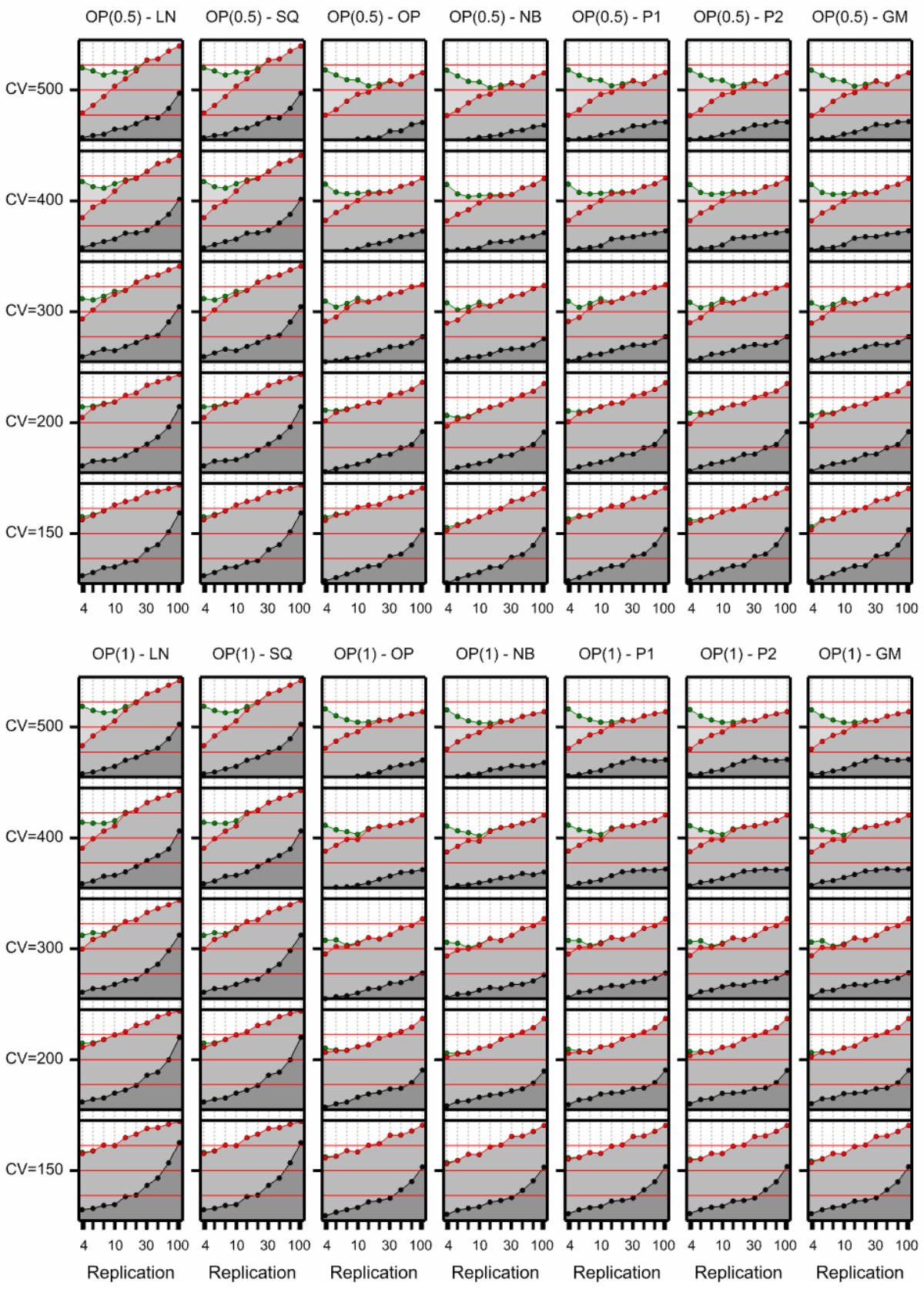
Appendix 2 E3: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 1



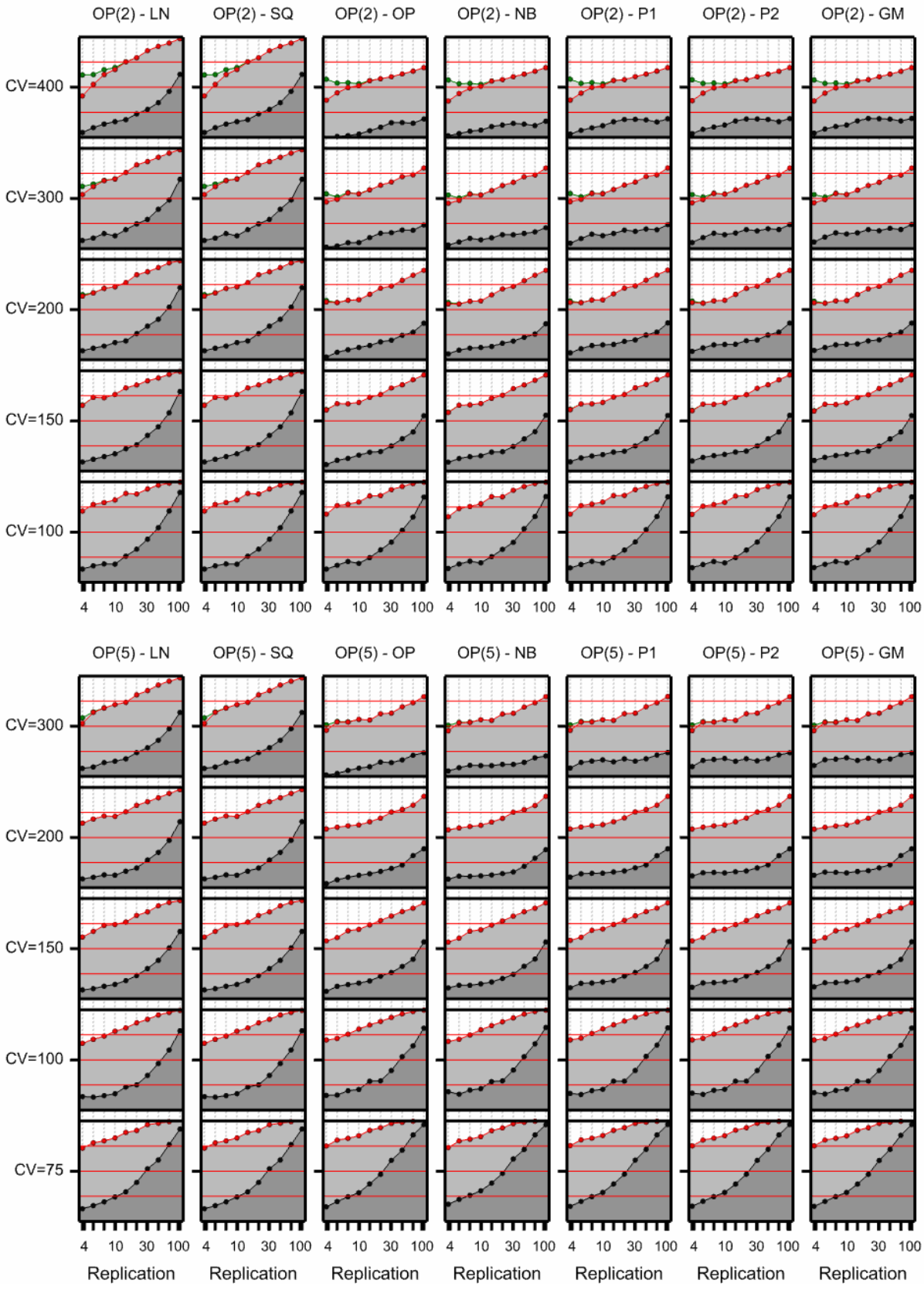
Appendix 2 E4: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 1



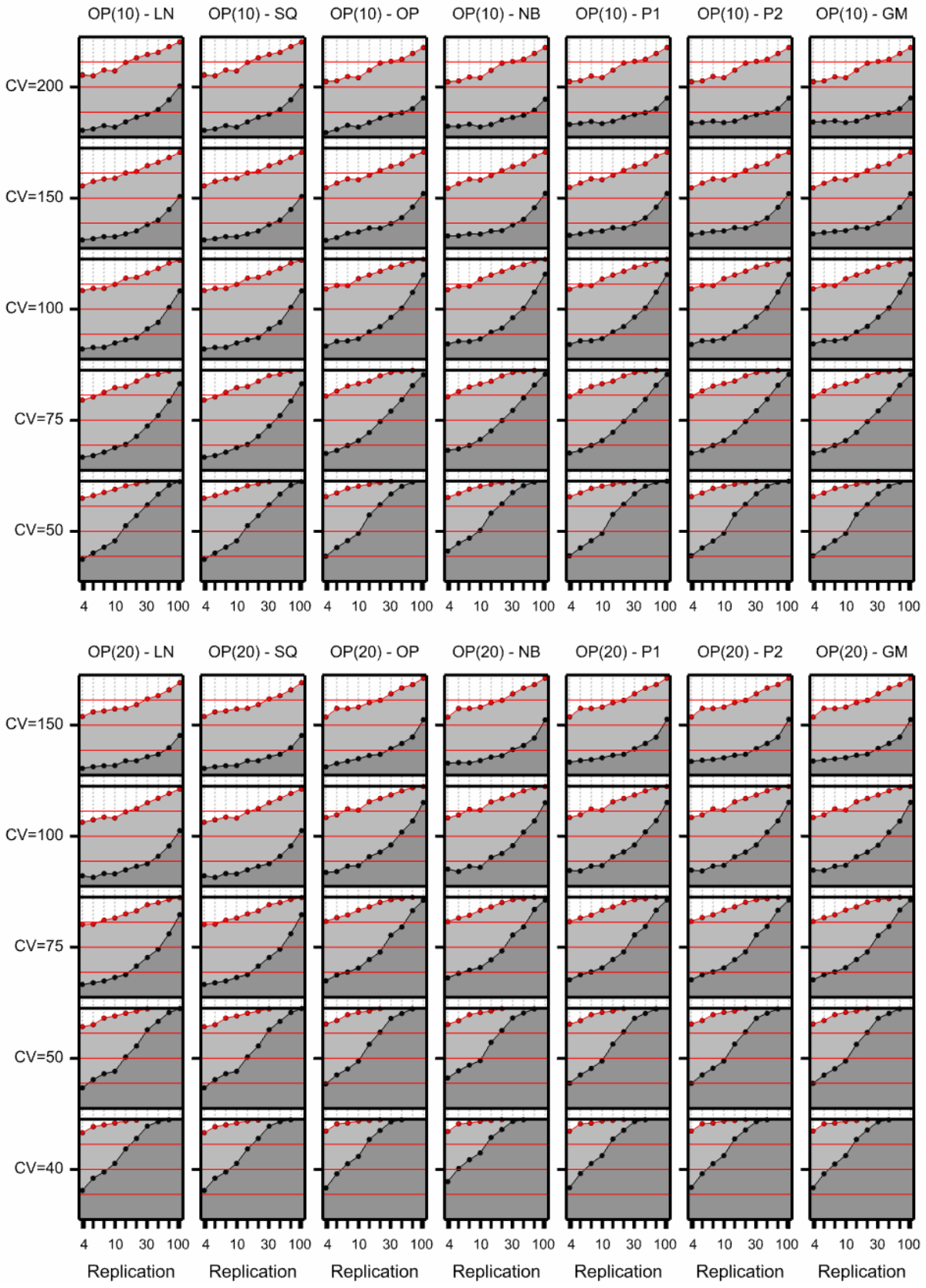
Appendix 2 E5: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.75



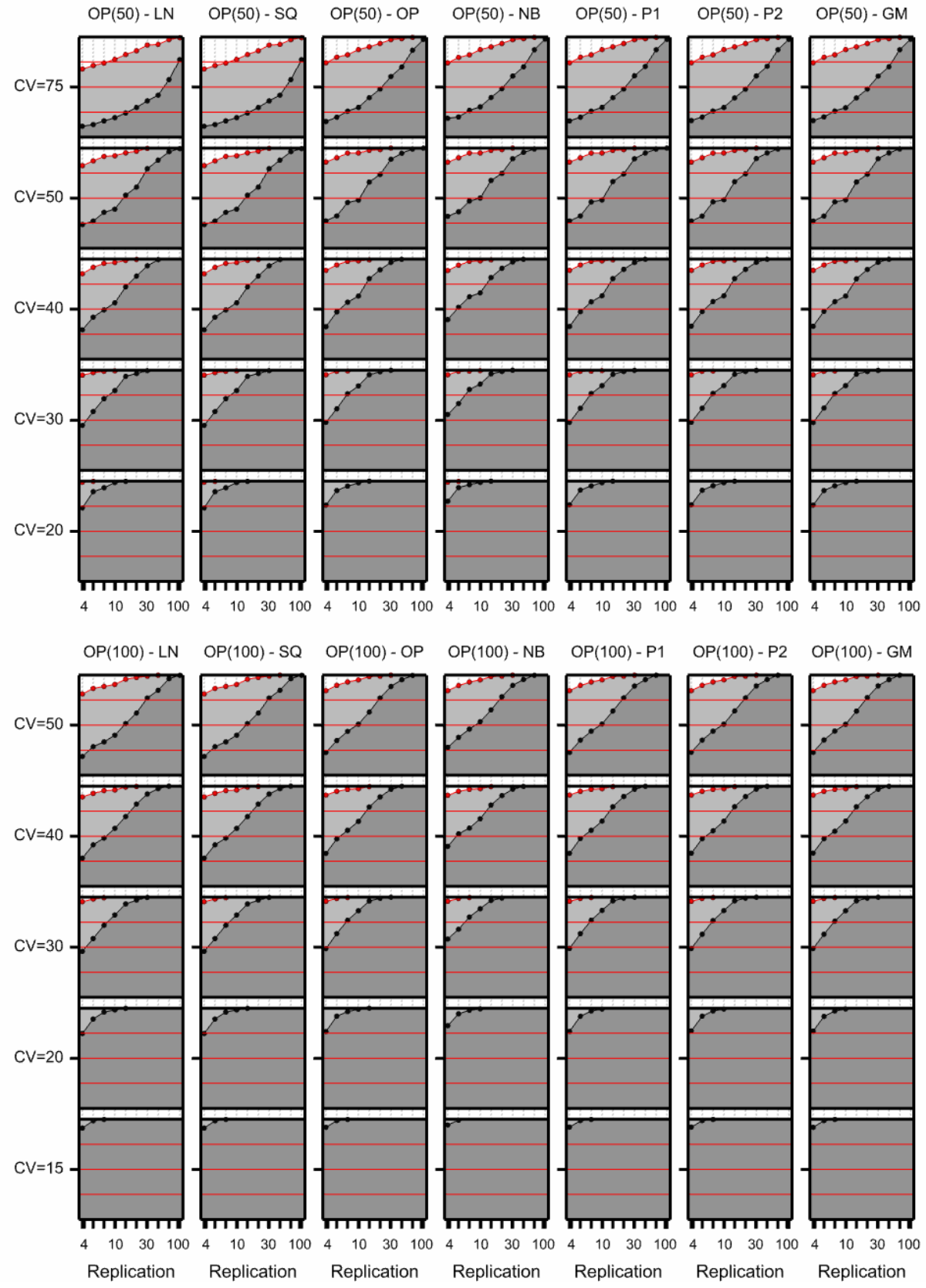
Appendix 2 E6: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.75



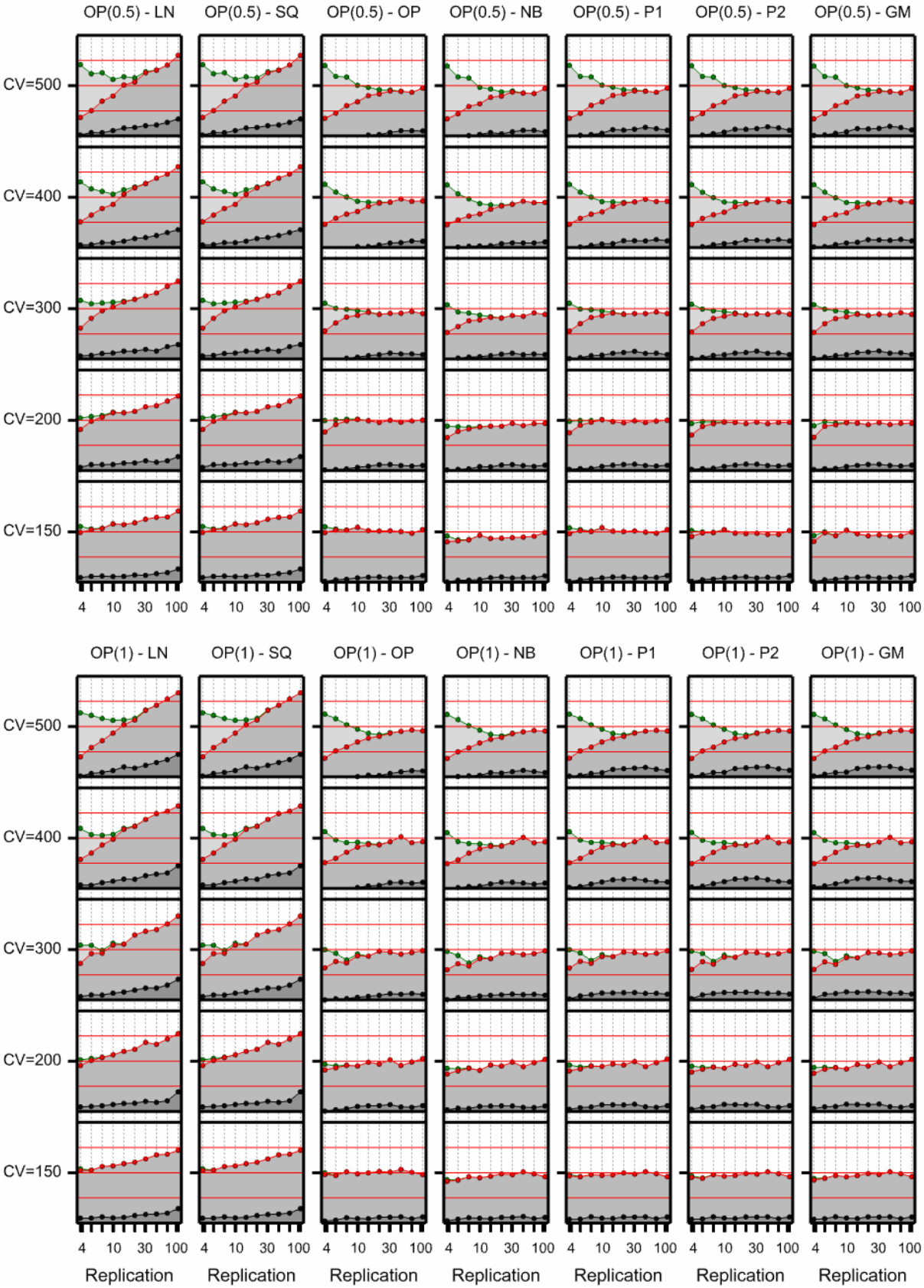
Appendix 2 E7: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.75



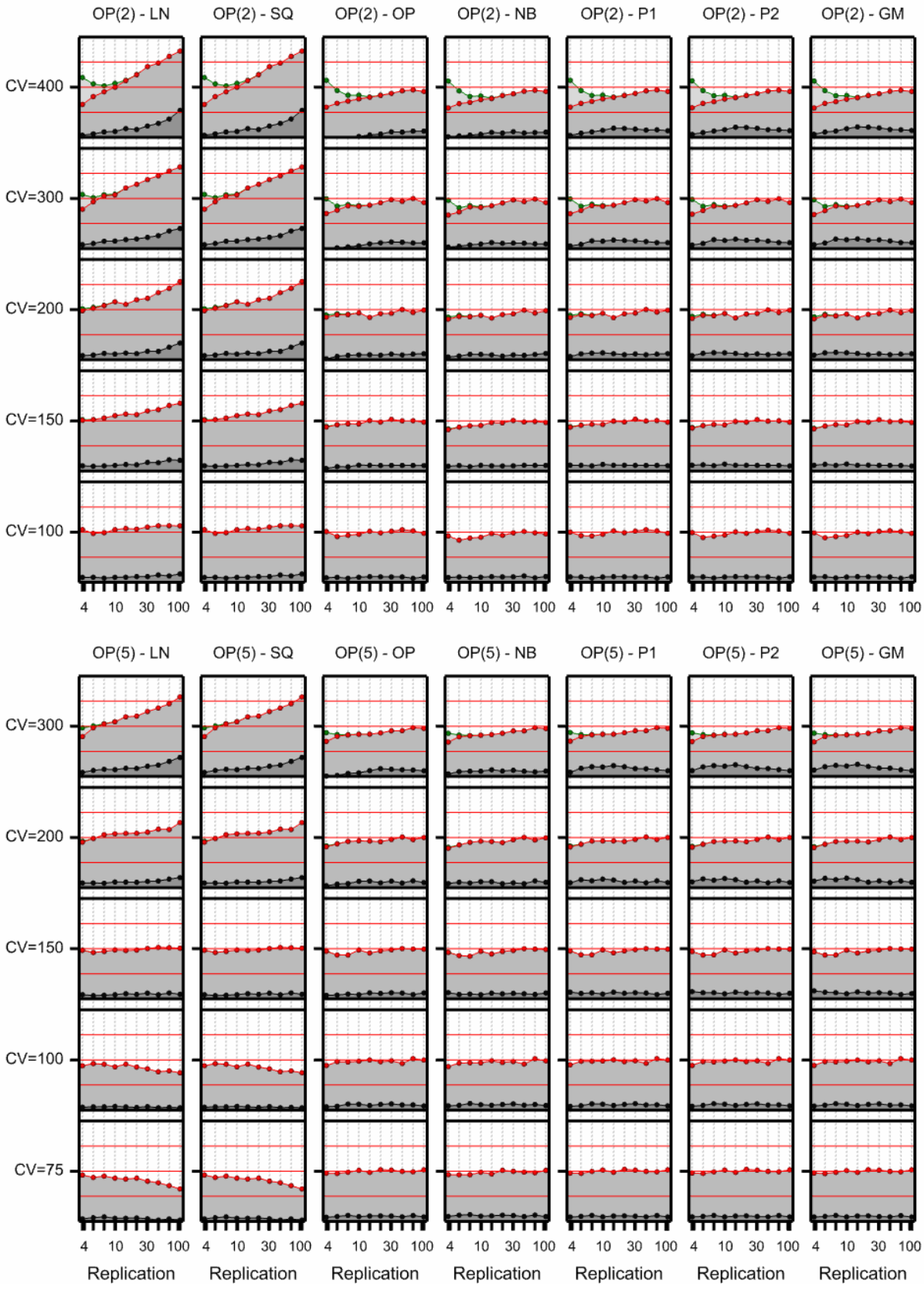
Appendix 2 E8: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.75



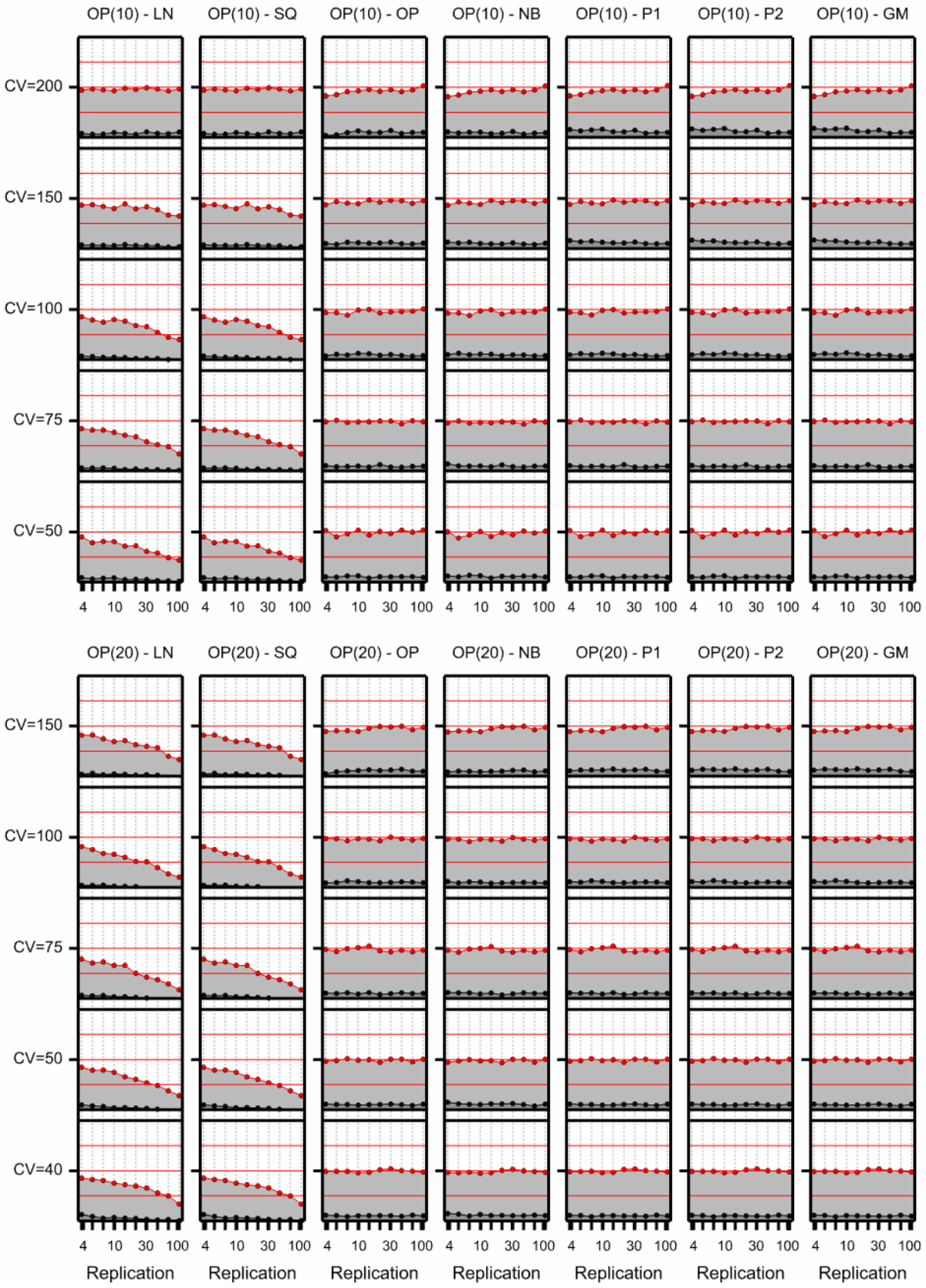
Appendix 2 E9: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.5



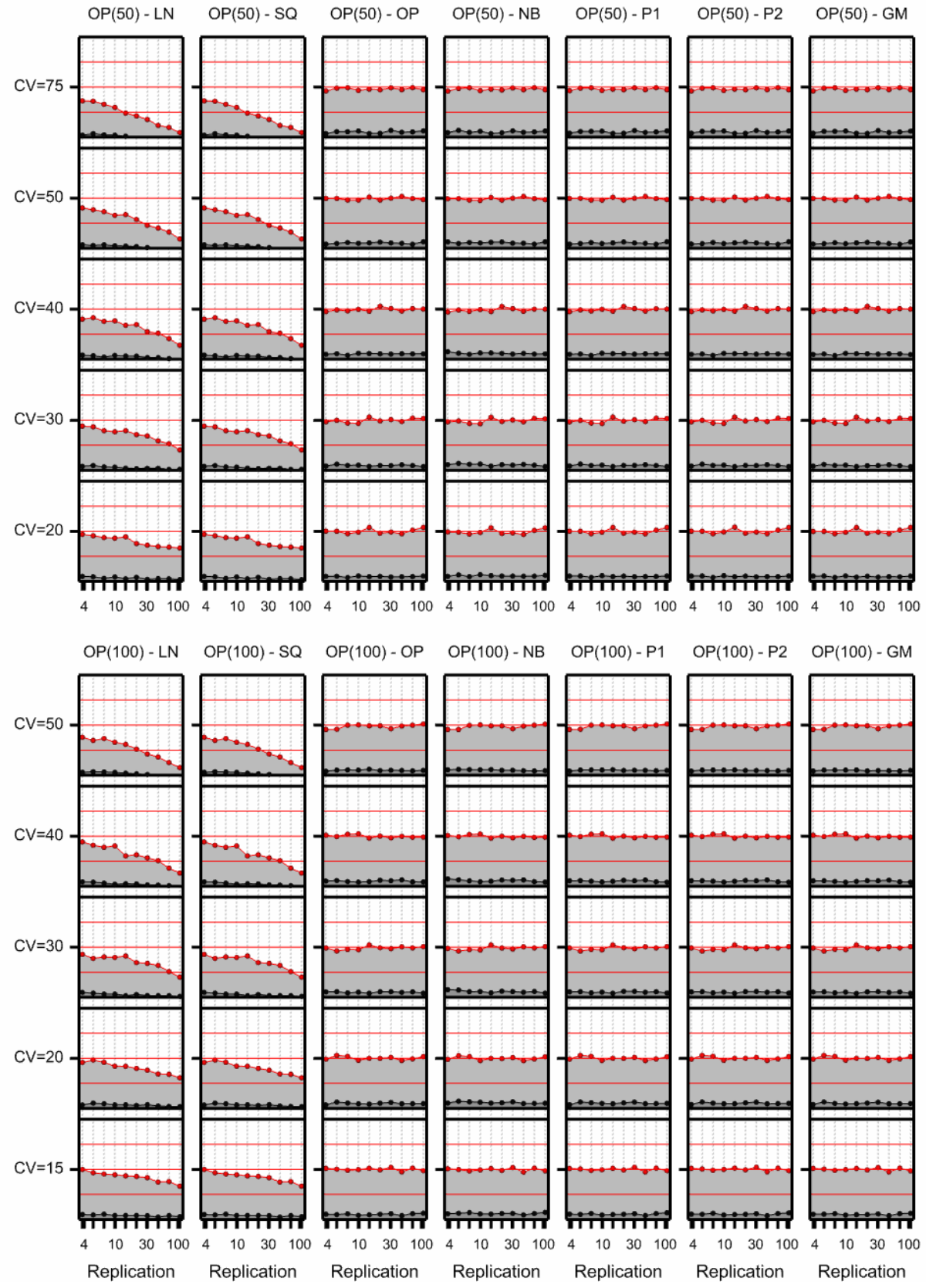
Appendix 2 E10: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.5



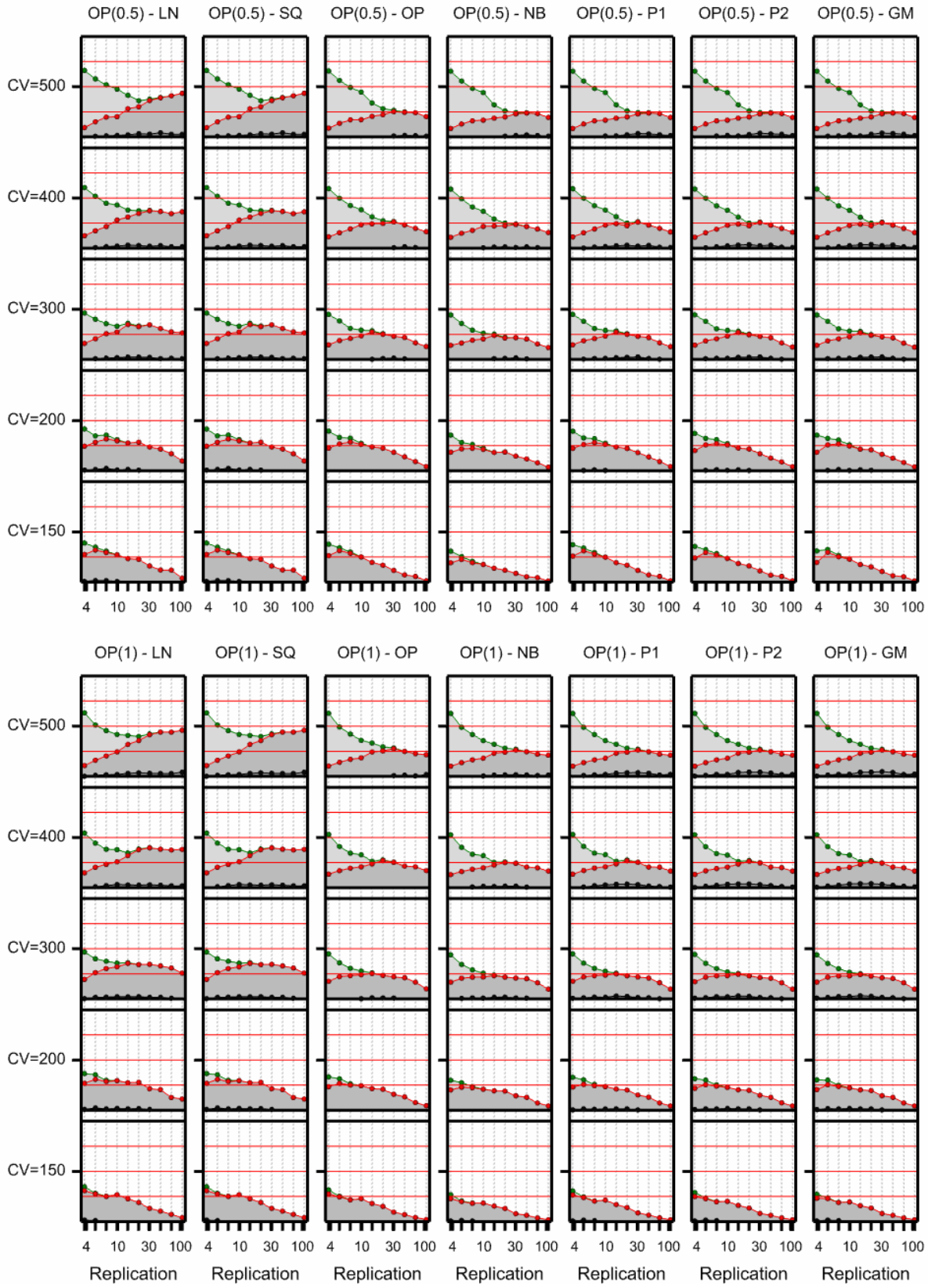
Appendix 2 E11: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.5



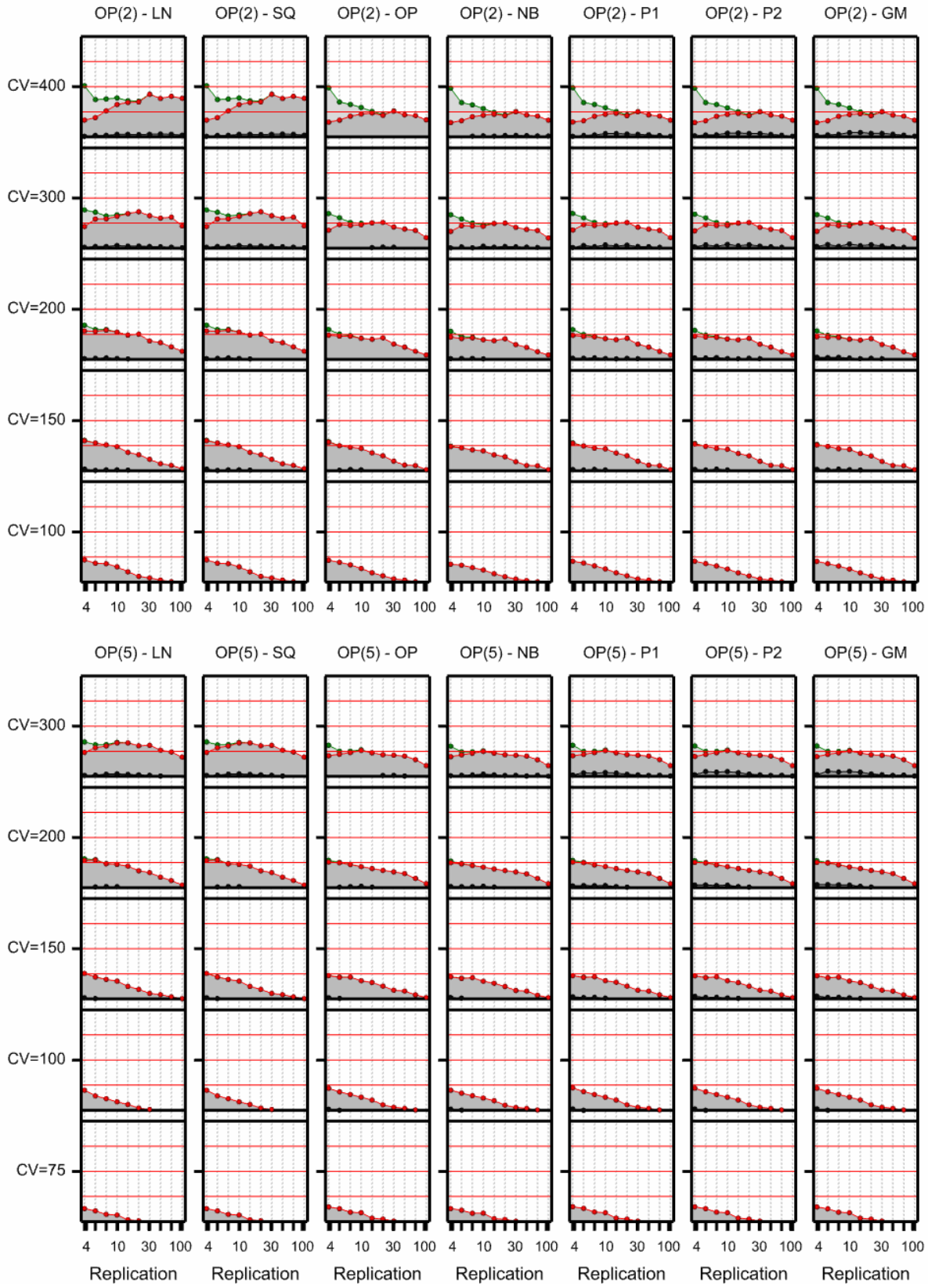
Appendix 2 E12: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.5



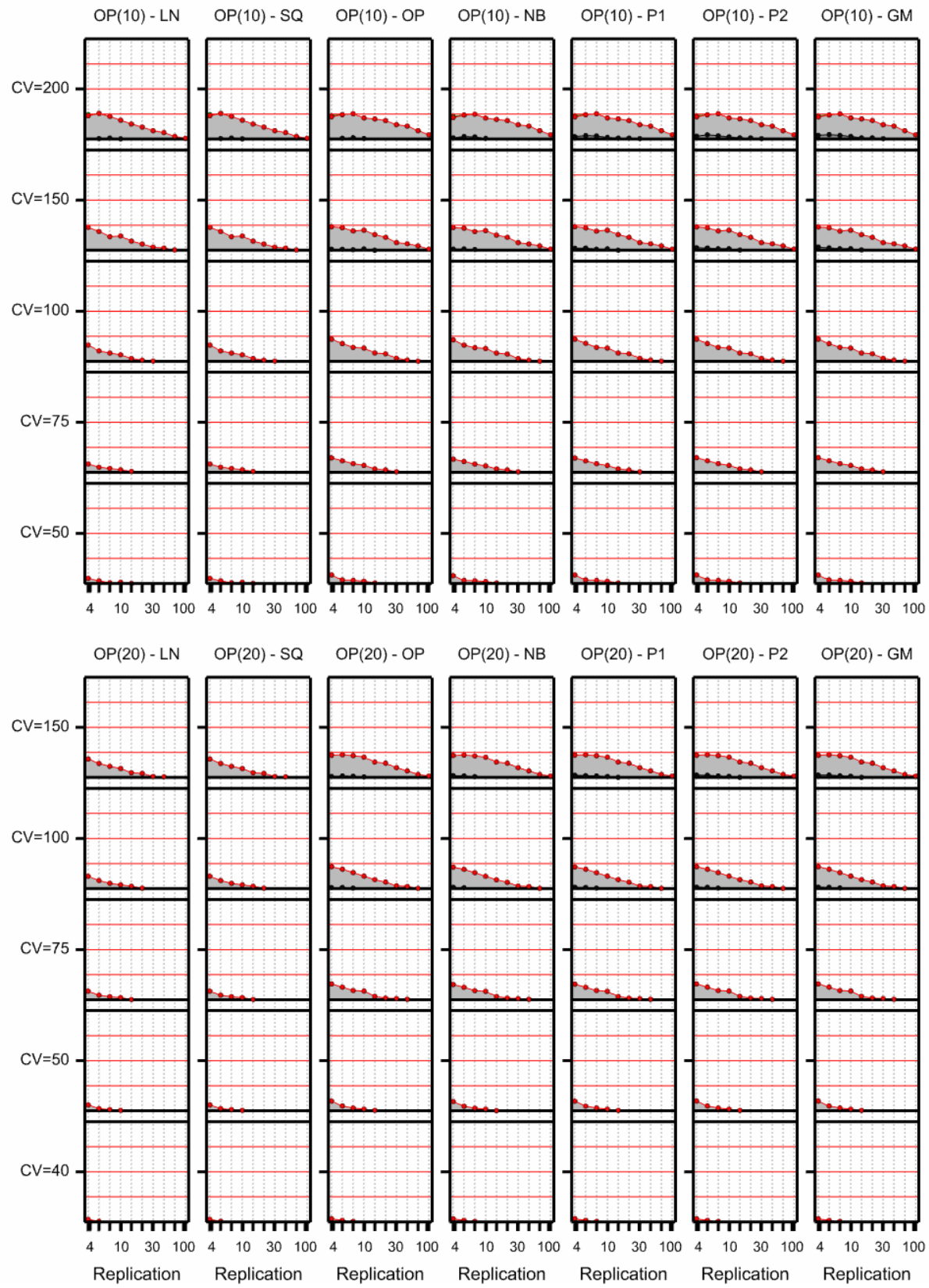
Appendix 2 E13: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.25



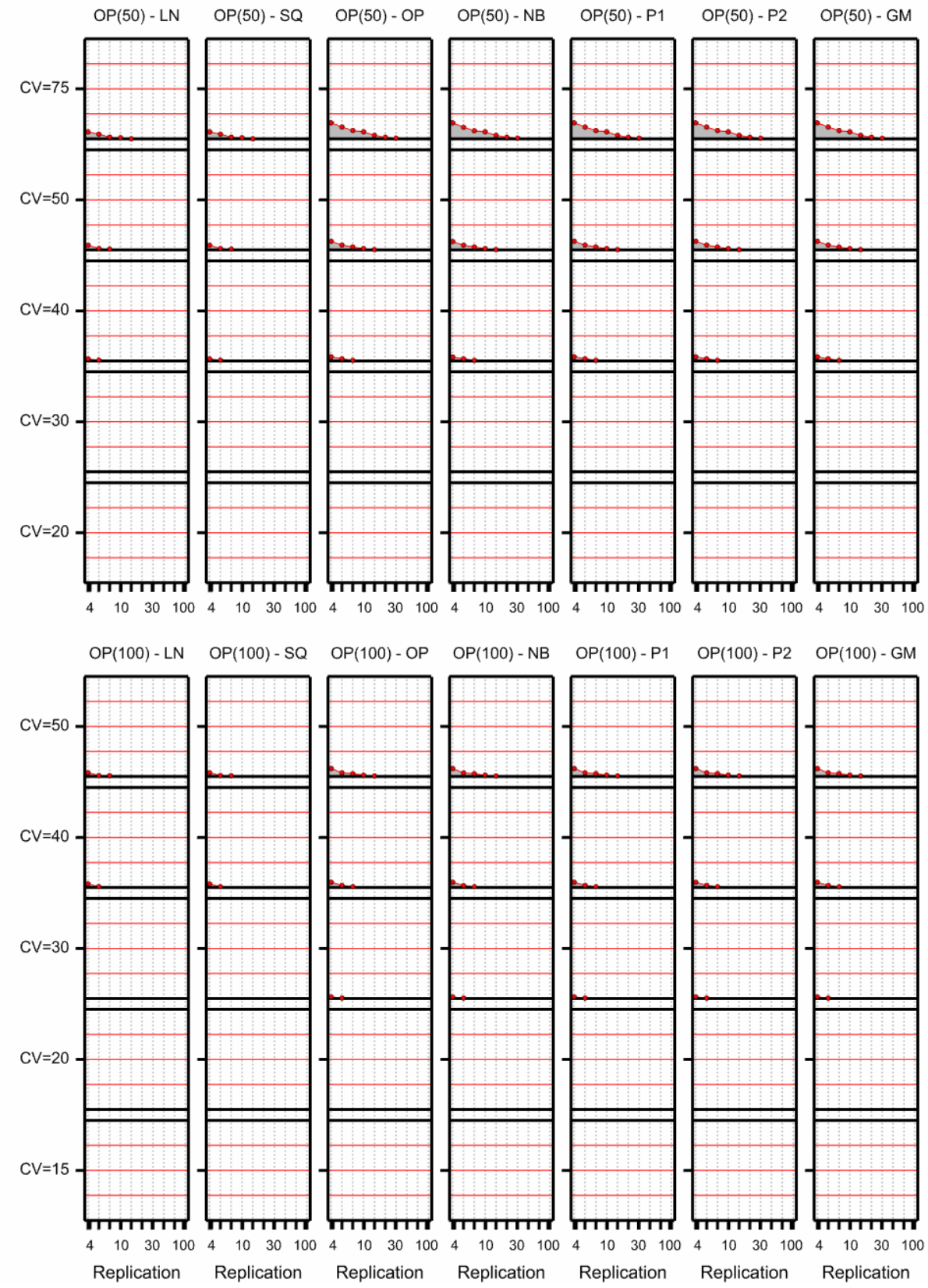
Appendix 2 E14: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.25



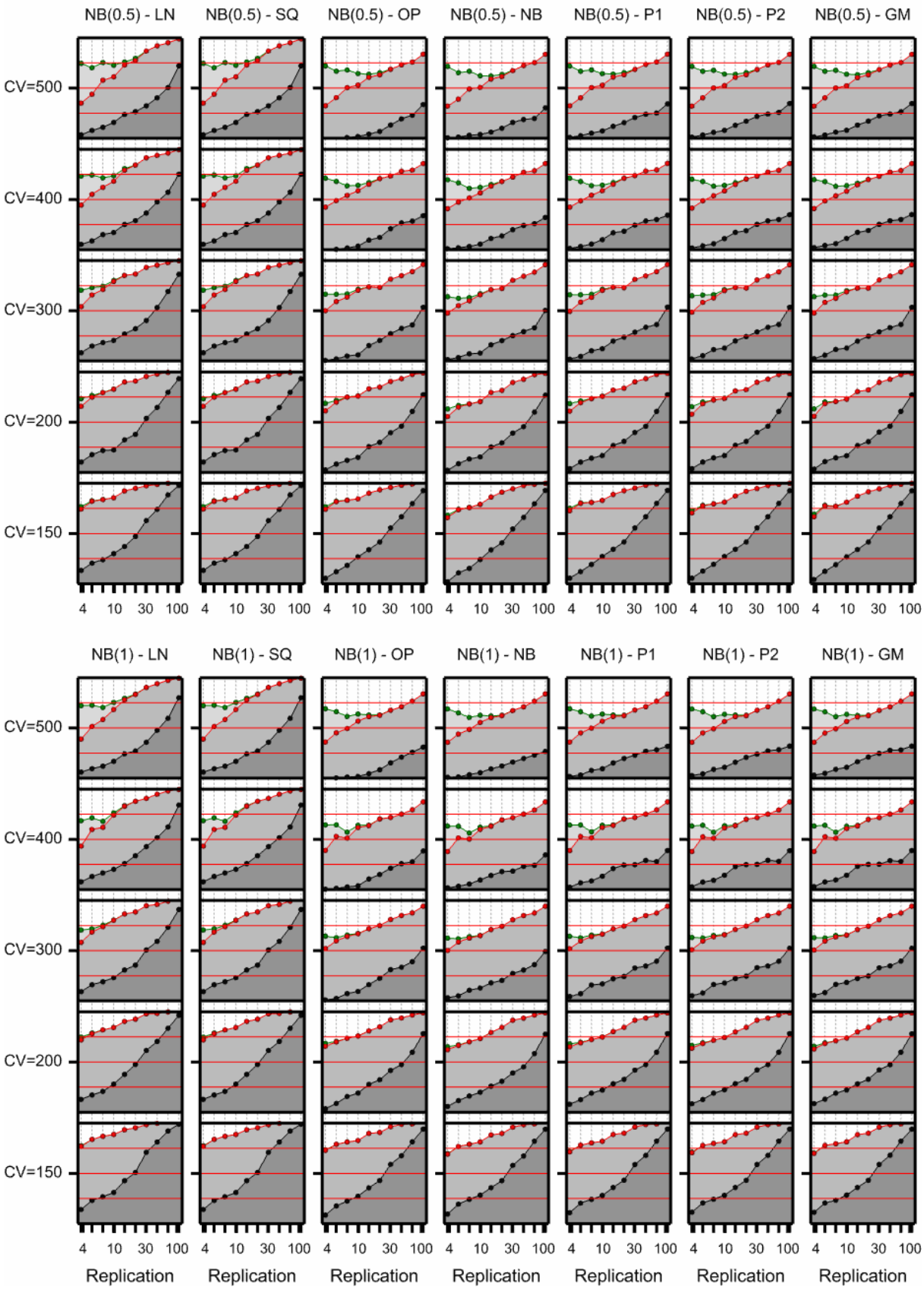
Appendix 2 E15: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.25



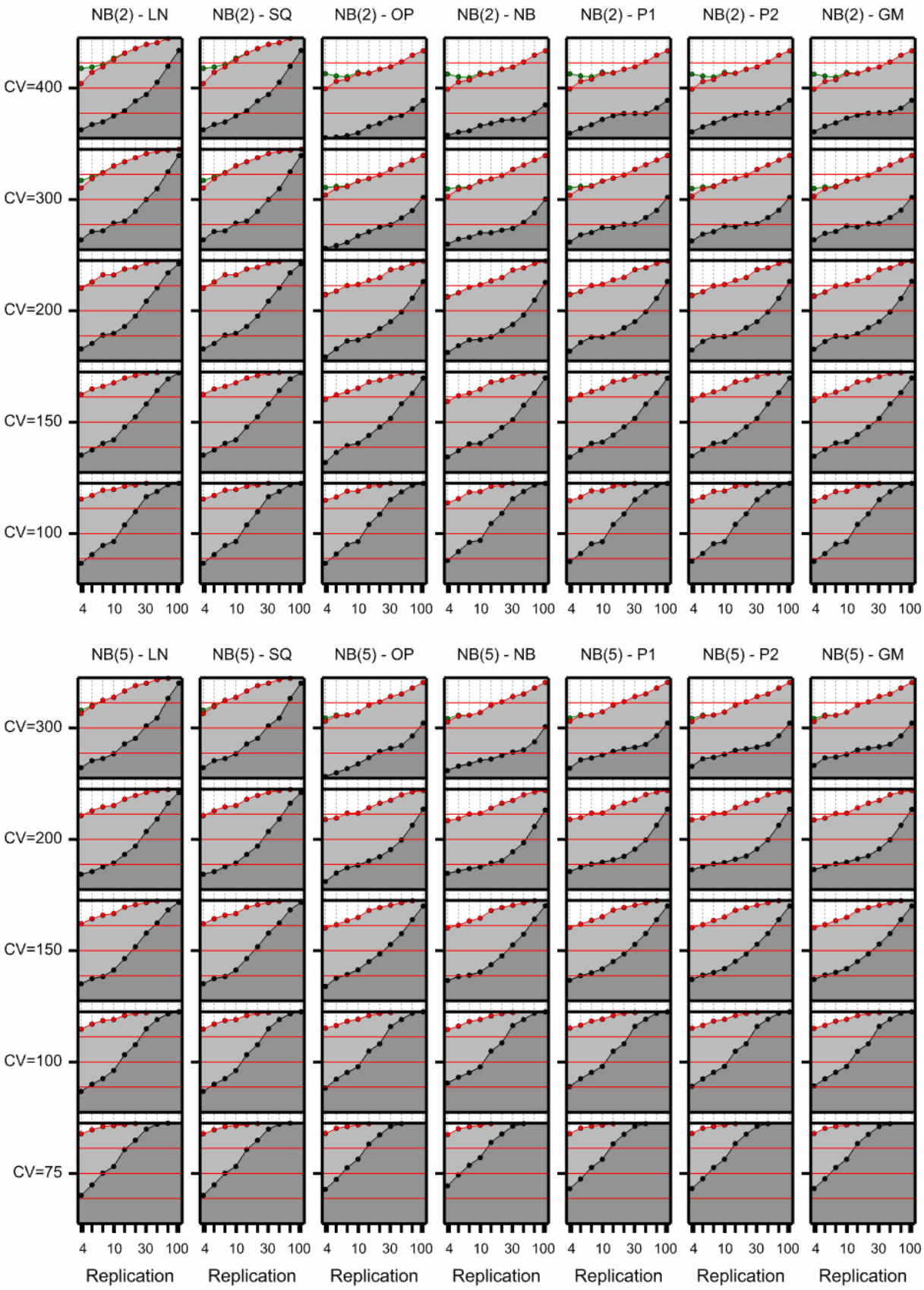
Appendix 2 E16: Power of equivalence test for Overdispersed Poisson; LOC=0.5; Q = 0.25



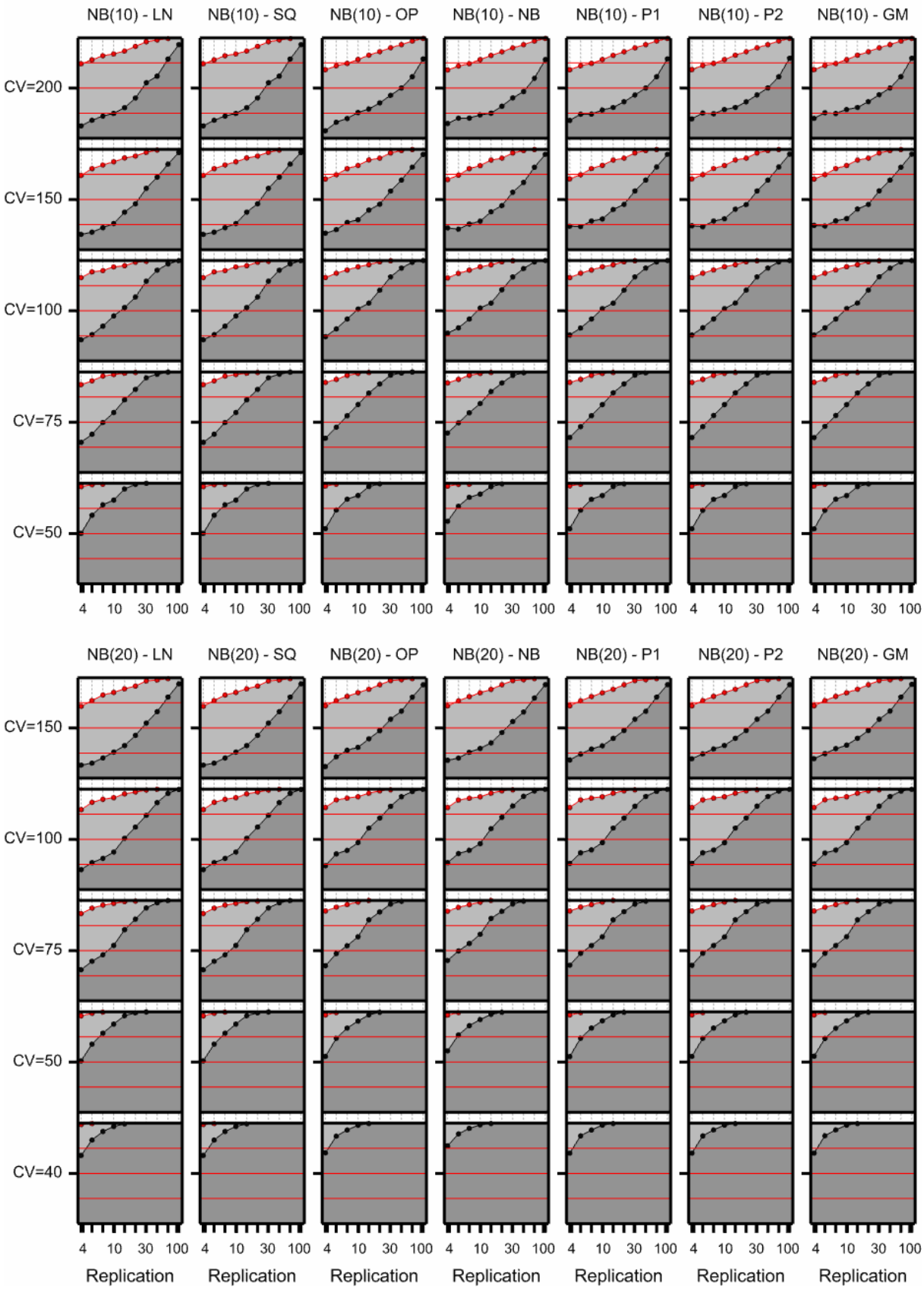
Appendix 2 F1: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 1



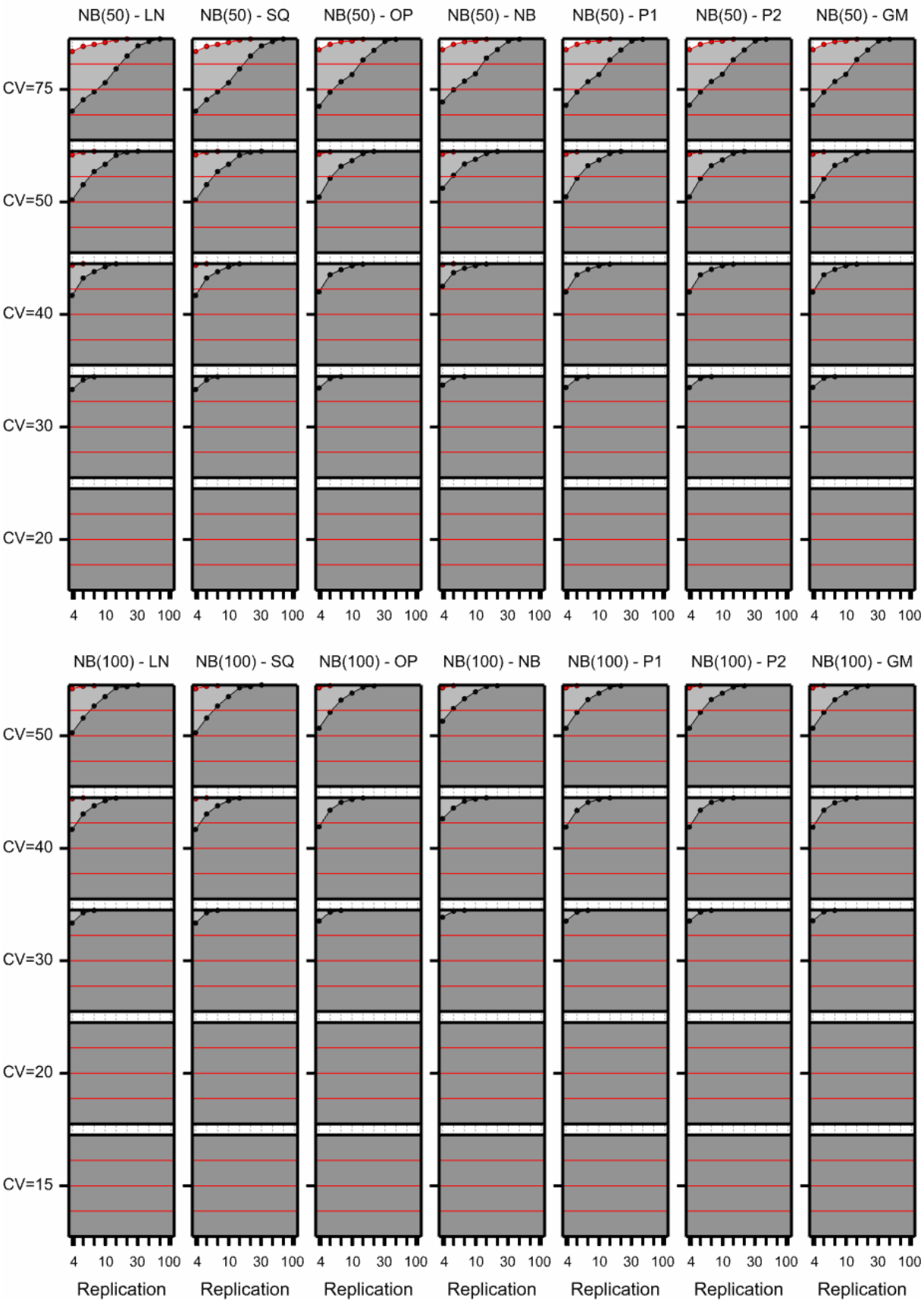
Appendix 2 F2: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 1



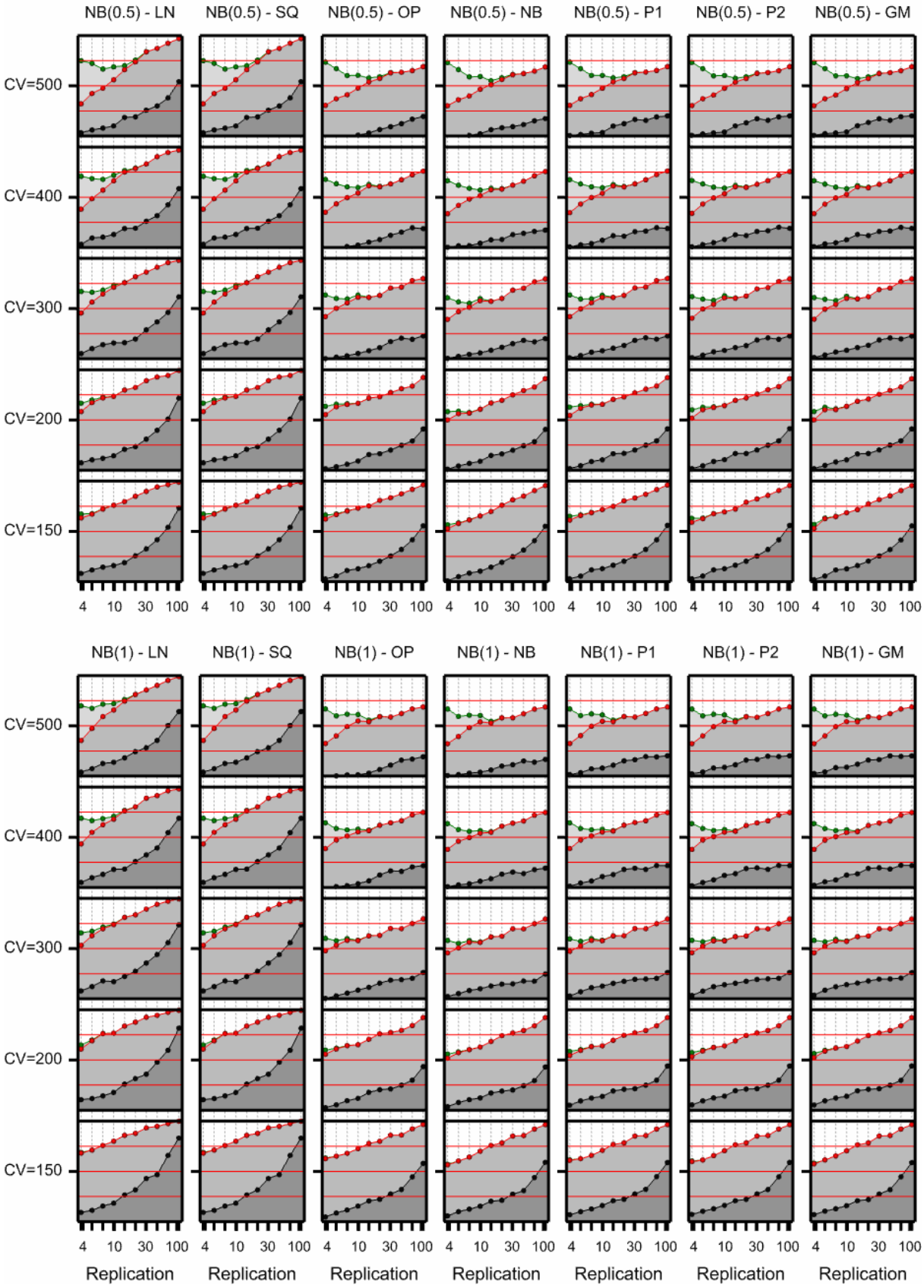
Appendix 2 F3: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 1



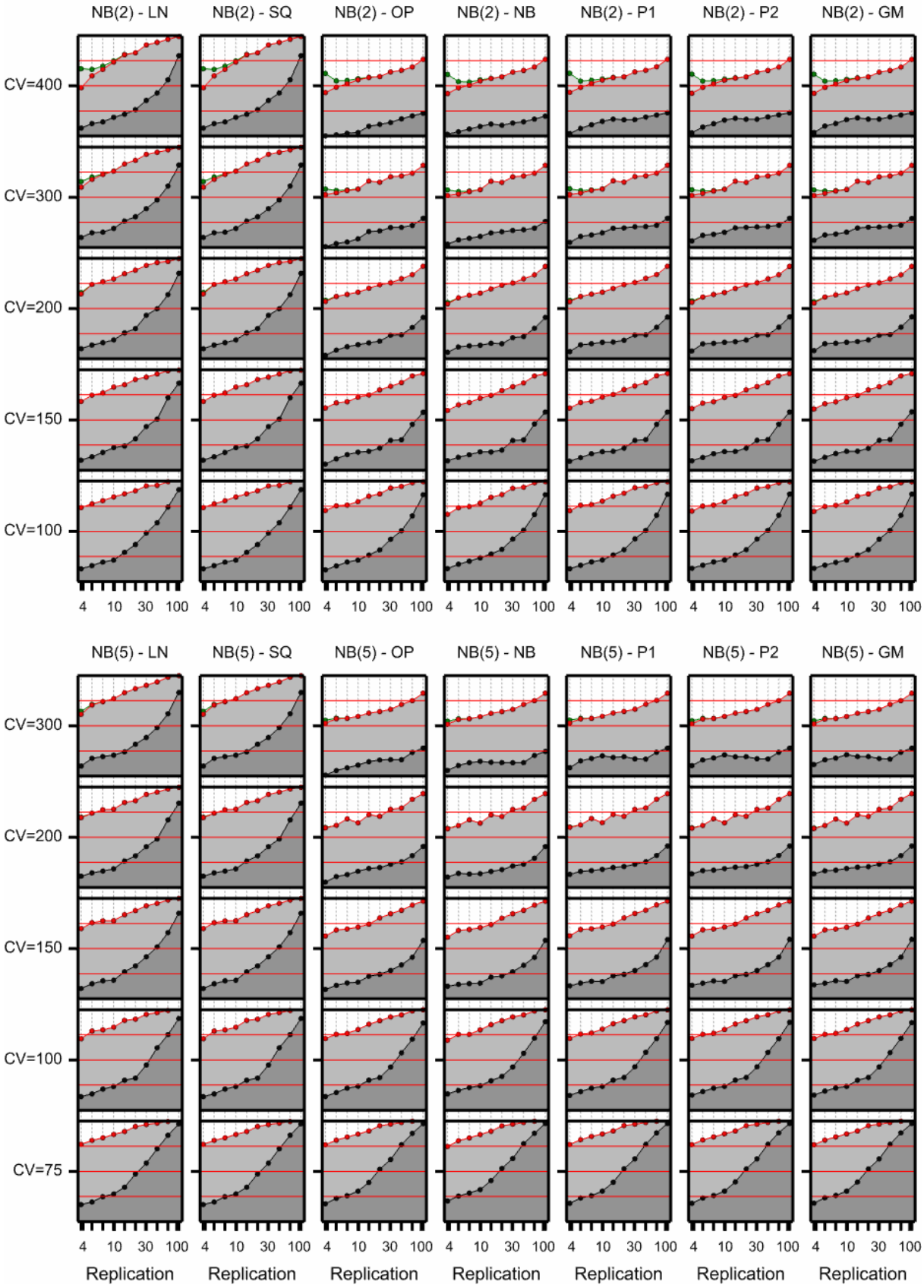
Appendix 2 F4: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 1



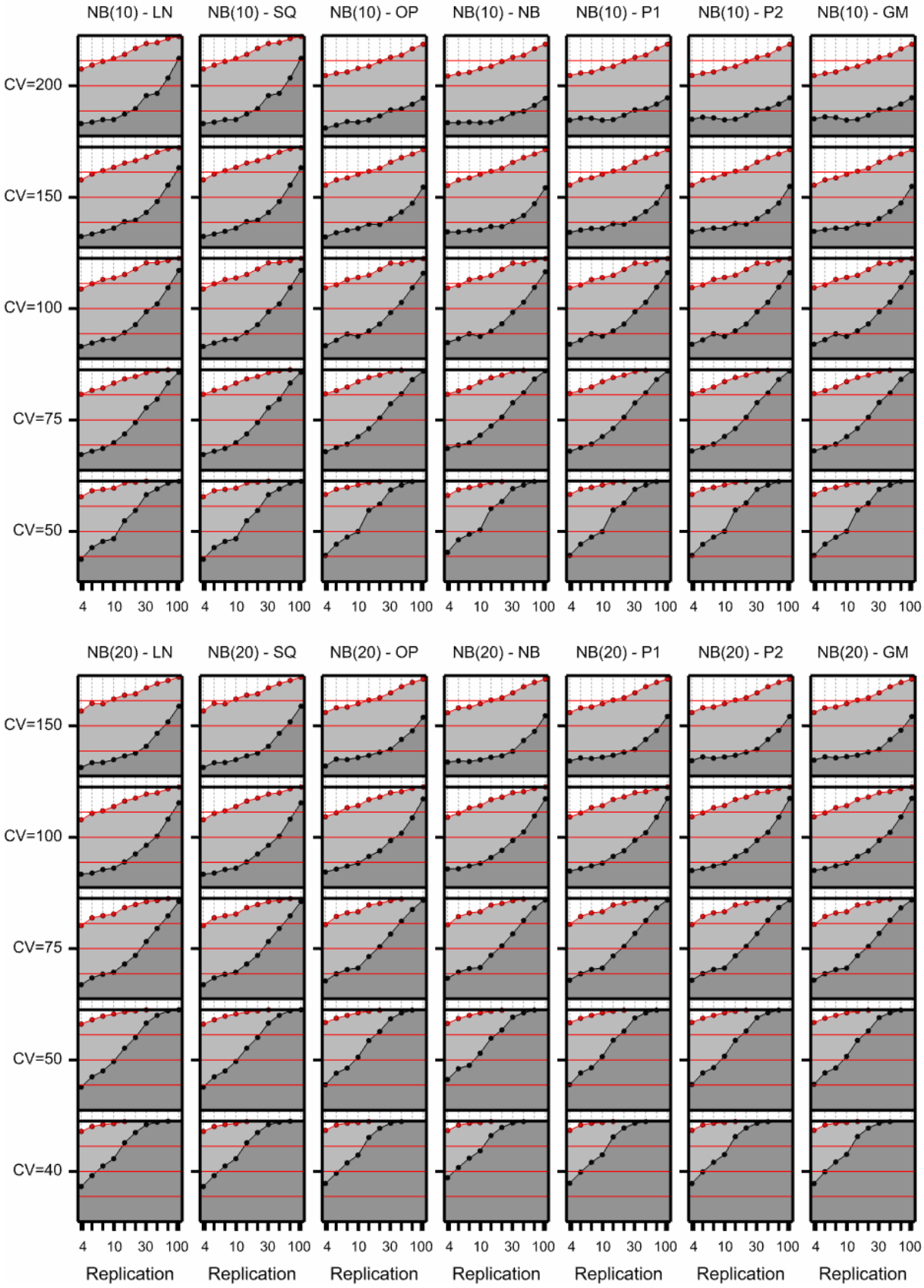
Appendix 2 F5: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.75



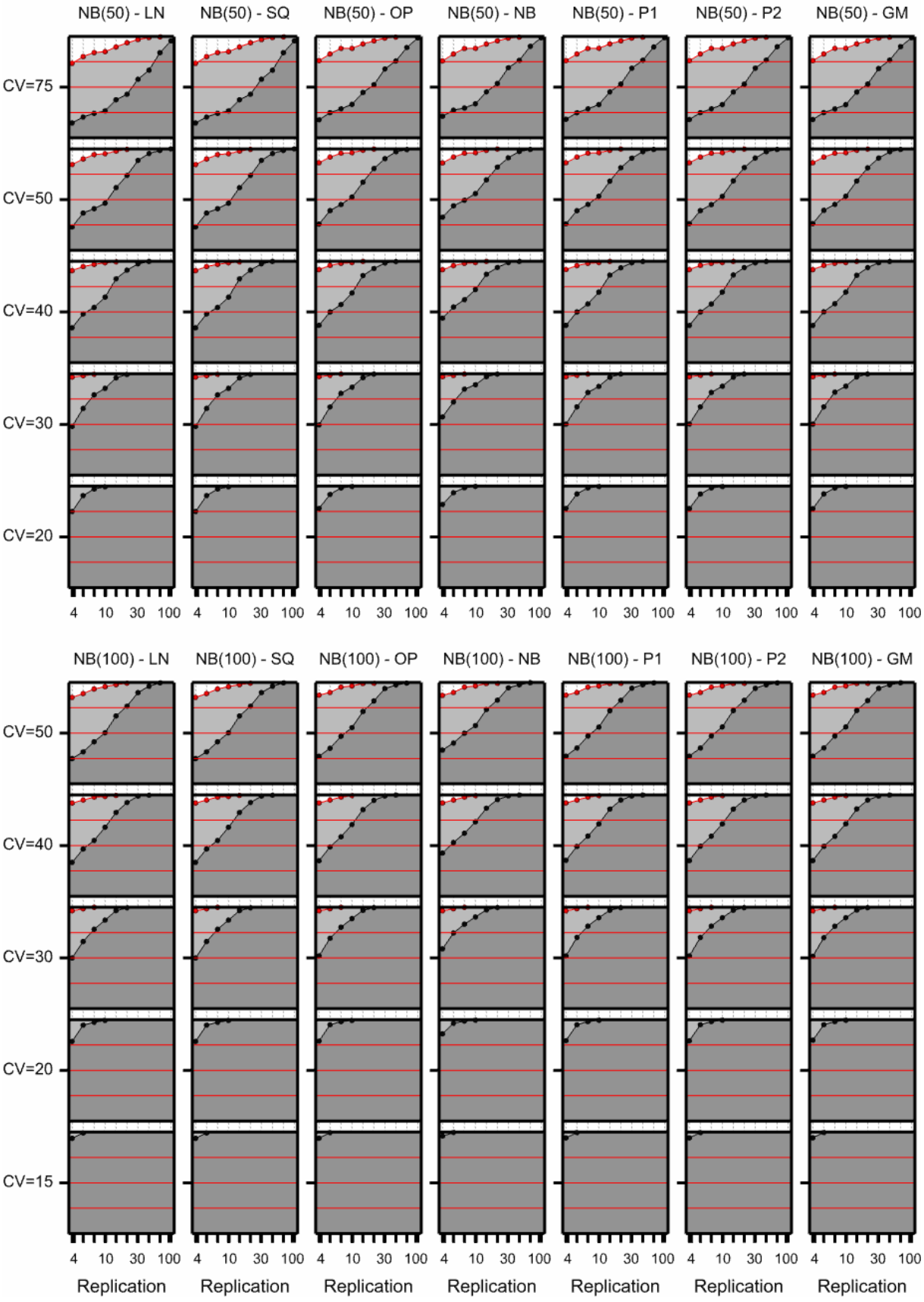
Appendix 2 F6: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.75



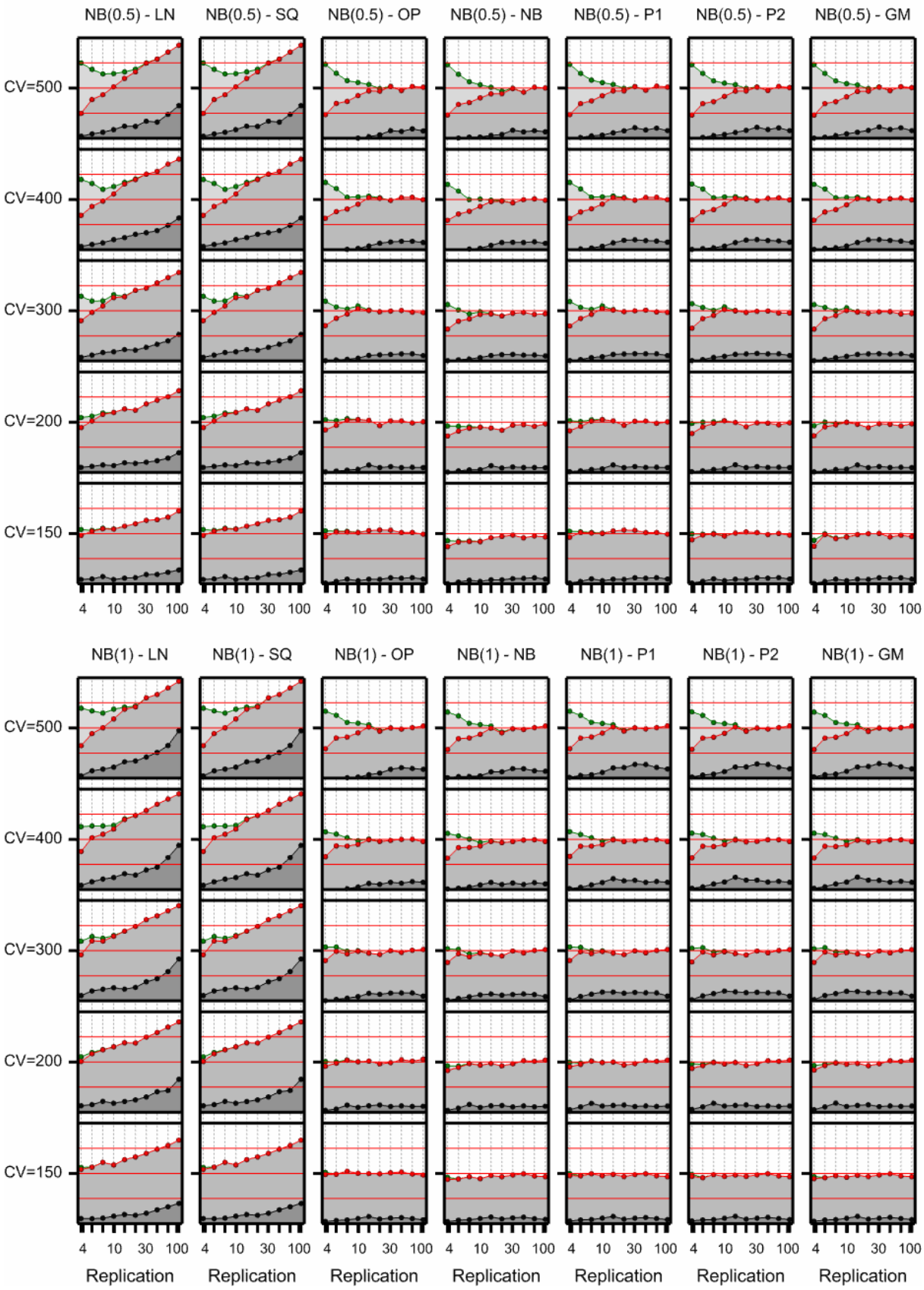
Appendix 2 F7: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.75



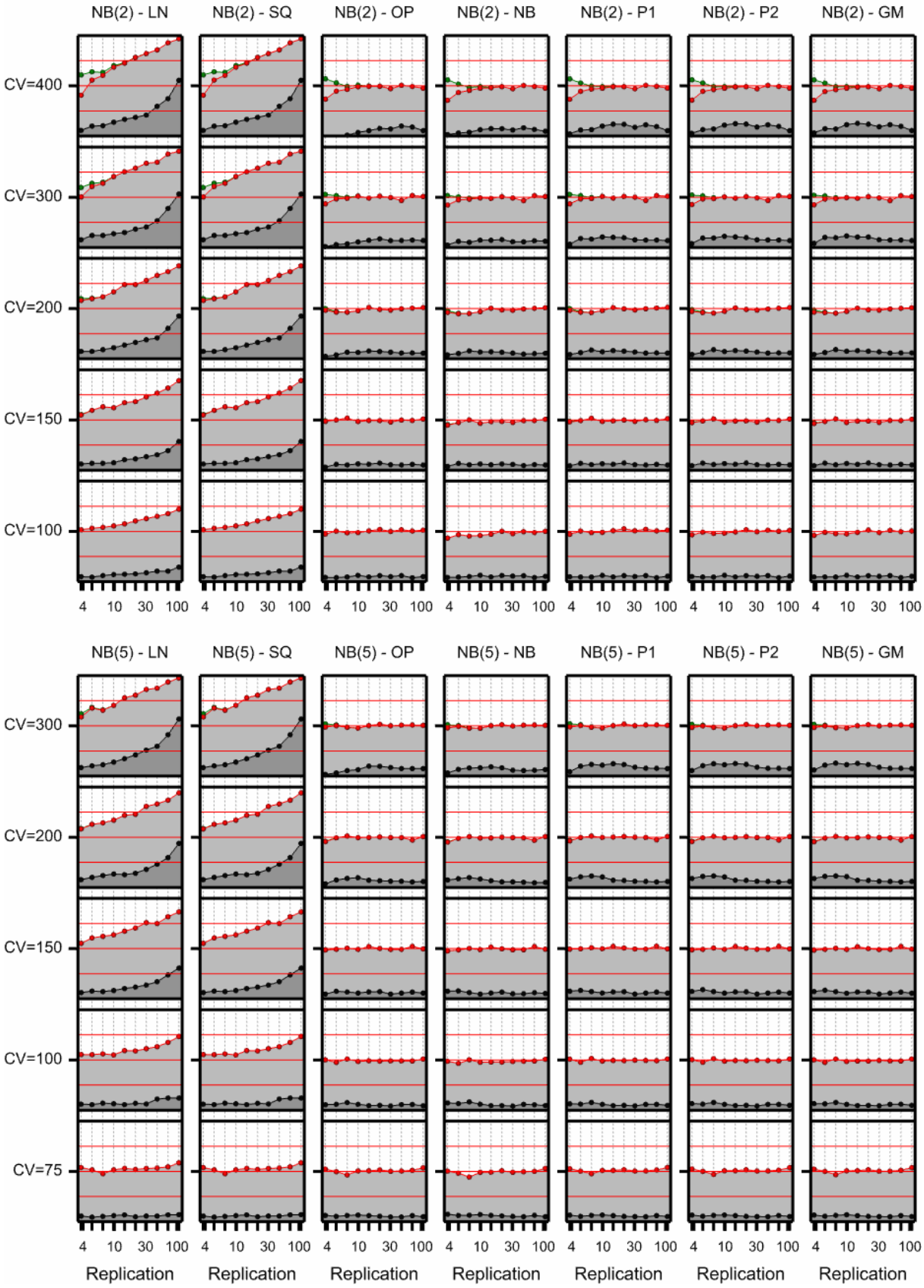
Appendix 2 F8: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.75



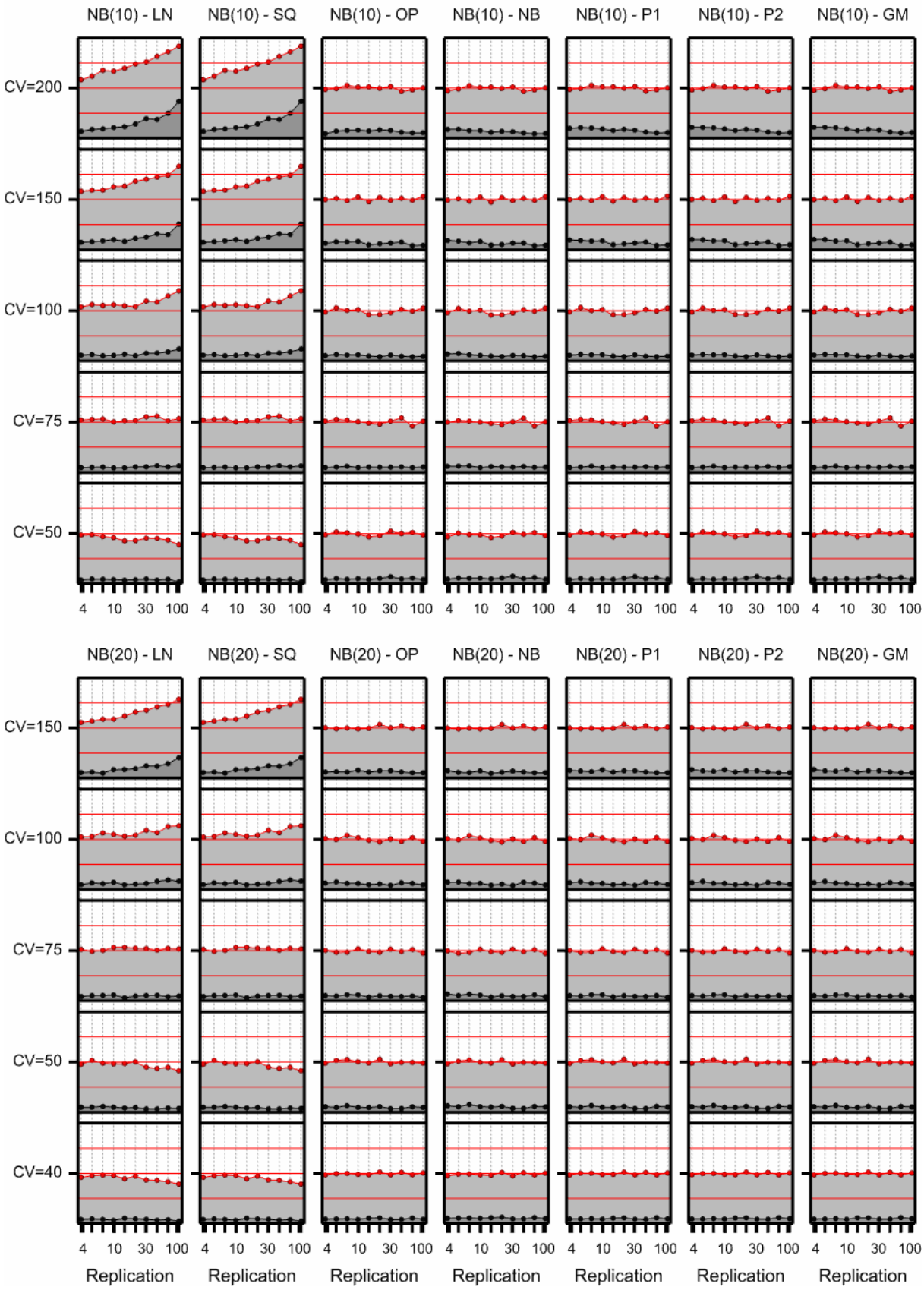
Appendix 2 F9: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.5



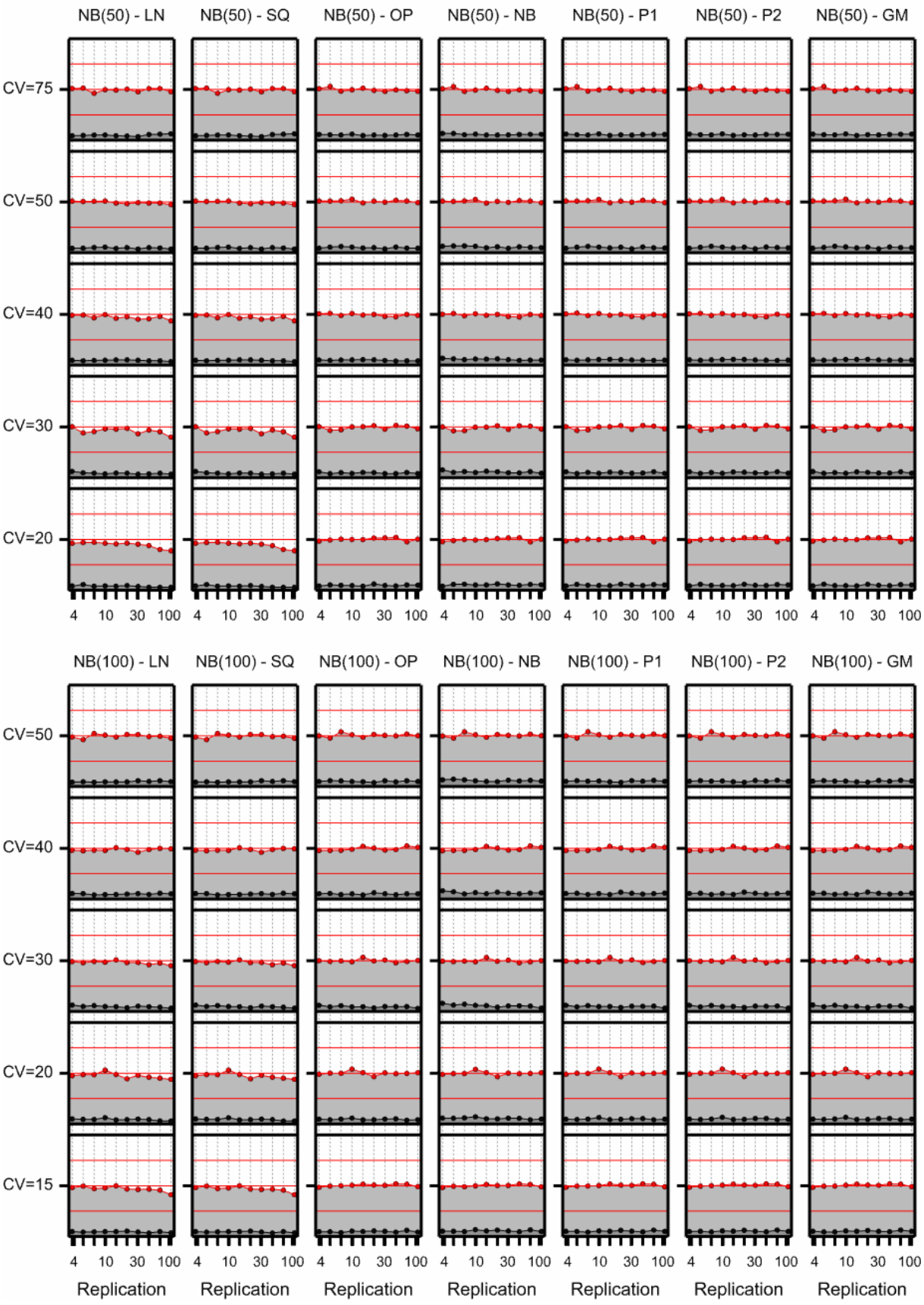
Appendix 2 F10: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.5



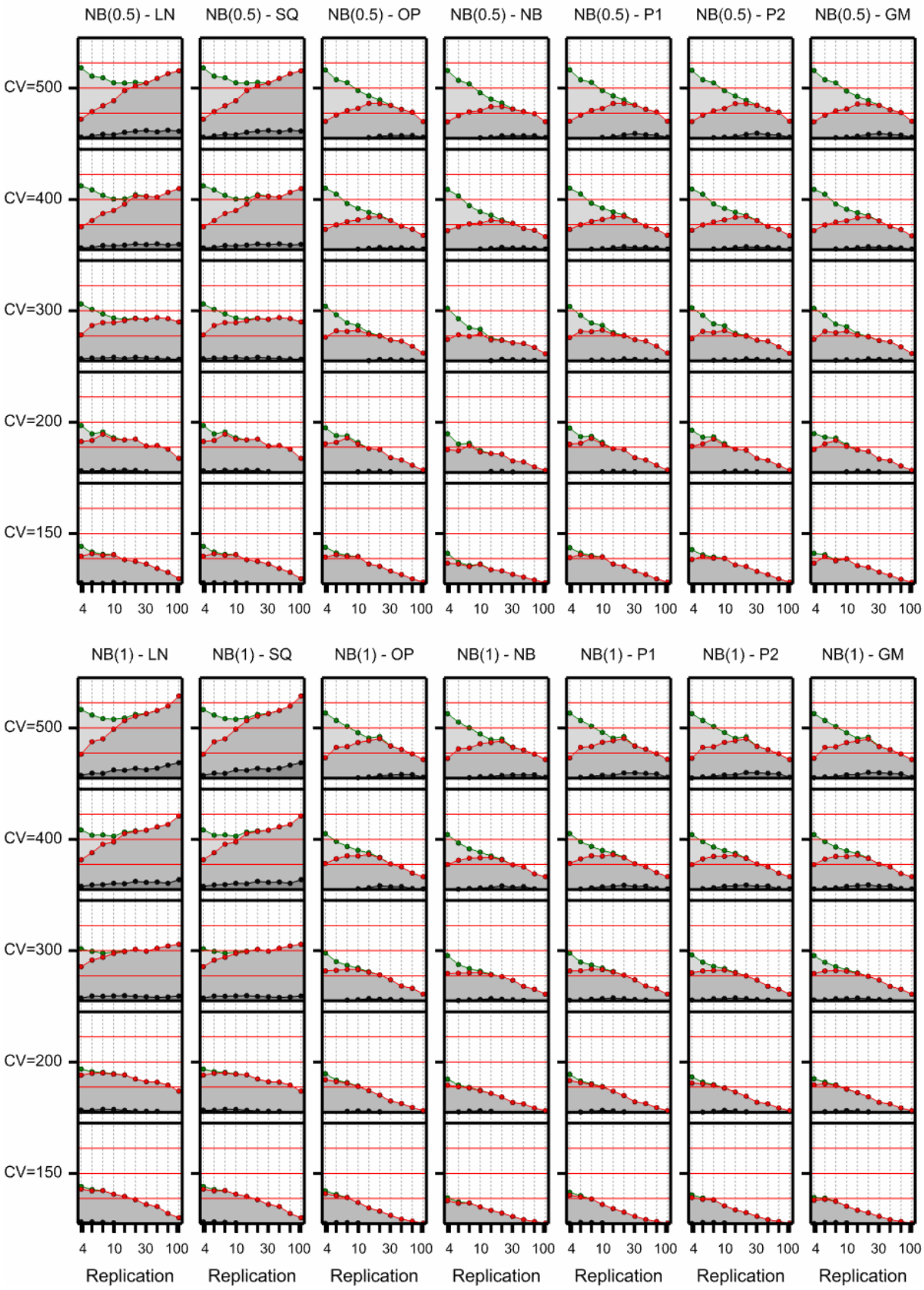
Appendix 2 F11: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.5



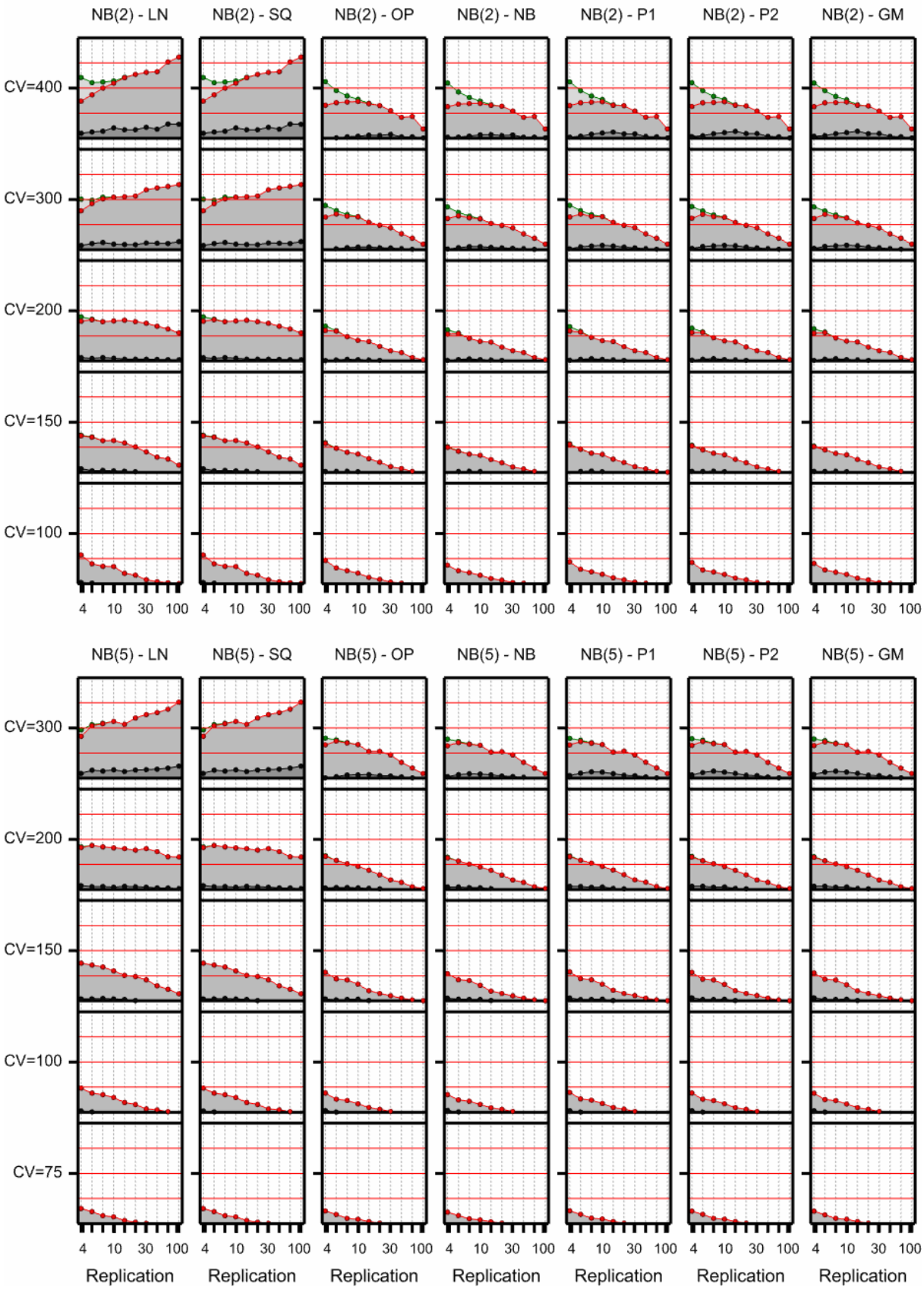
Appendix 2 F12: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.5



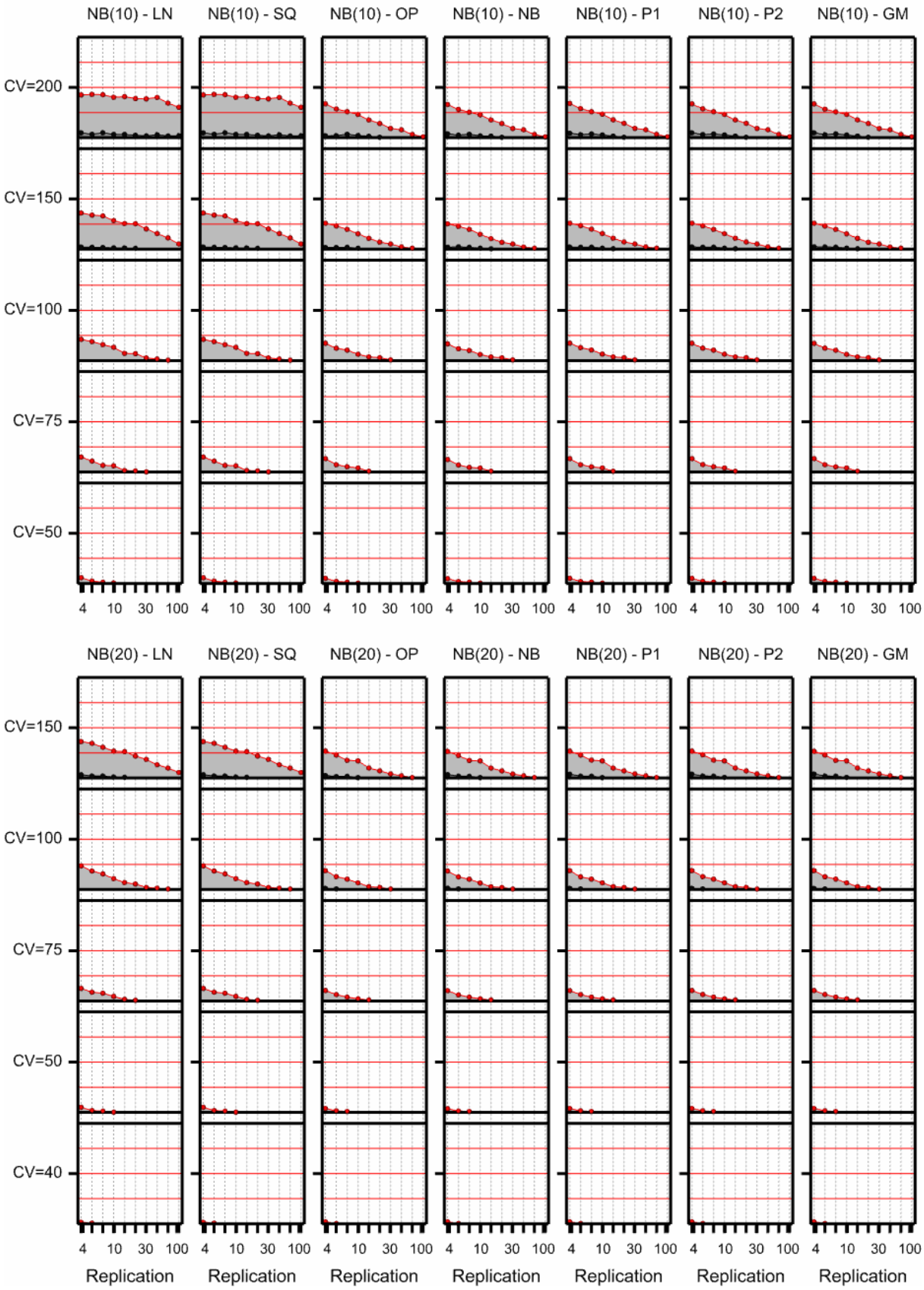
Appendix 2 F13: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.25



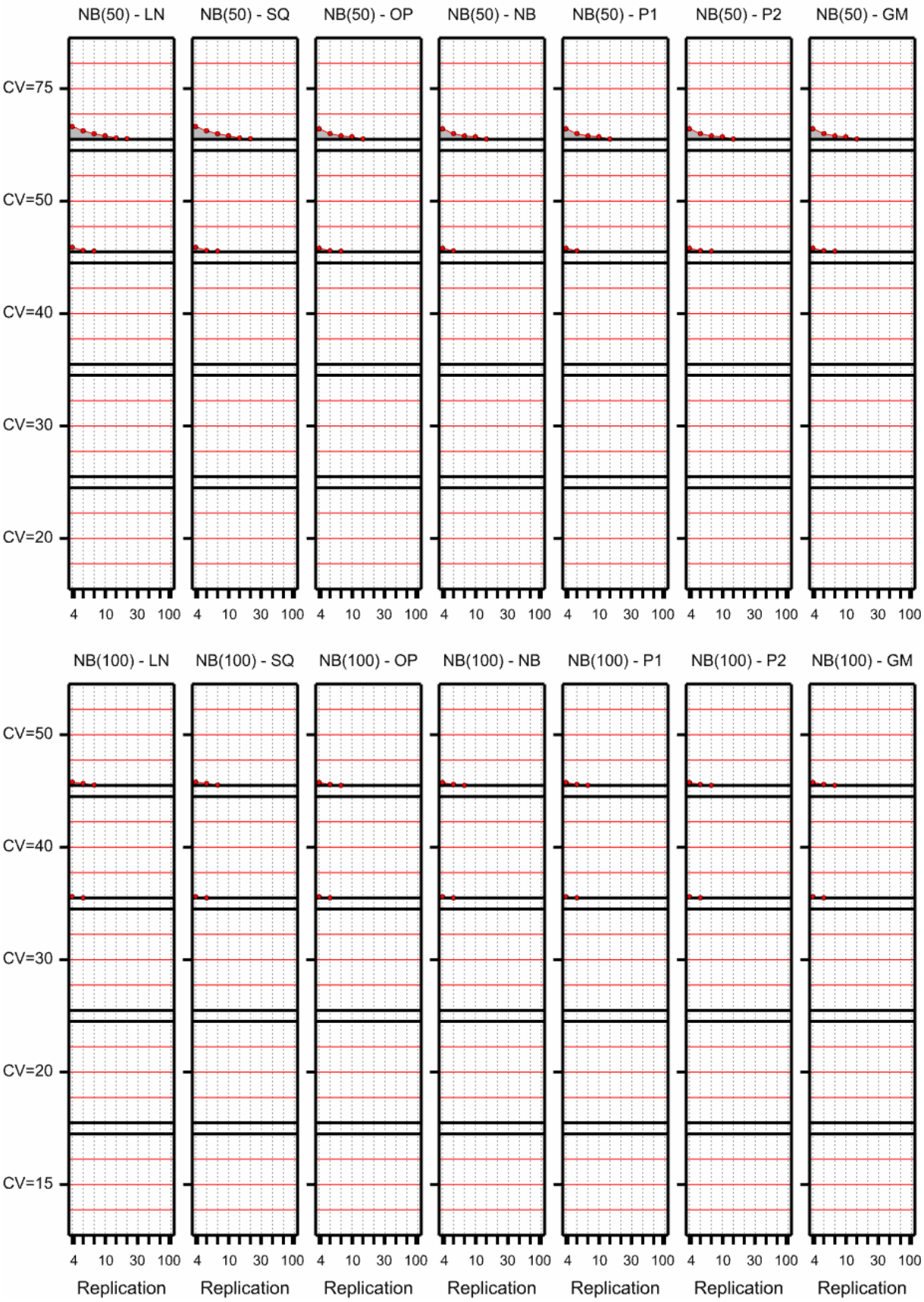
Appendix 2 F14: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.25



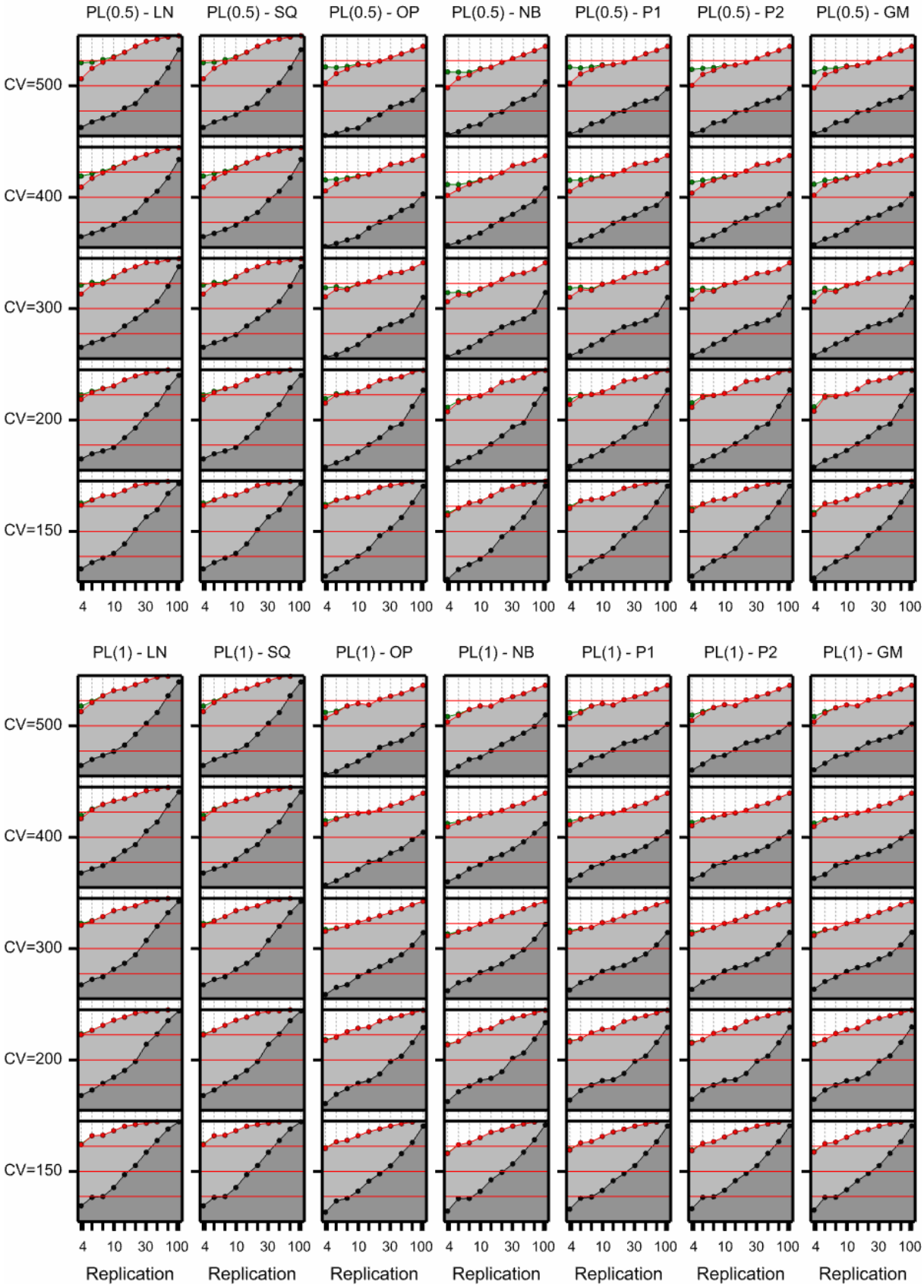
Appendix 2 F15: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.25



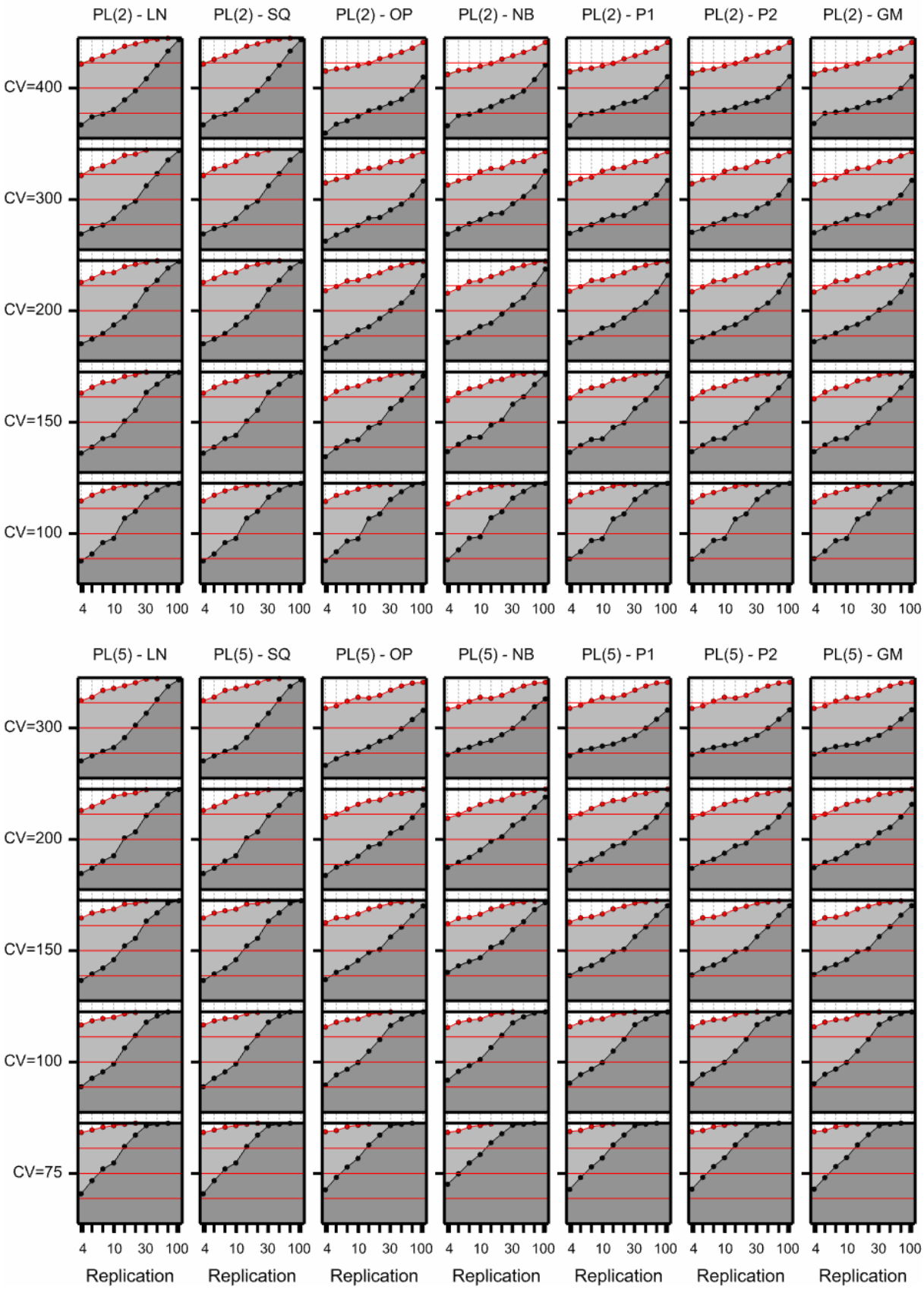
Appendix 2 F16: Power of equivalence test for Negative Binomial; LOC=0.5; Q = 0.25



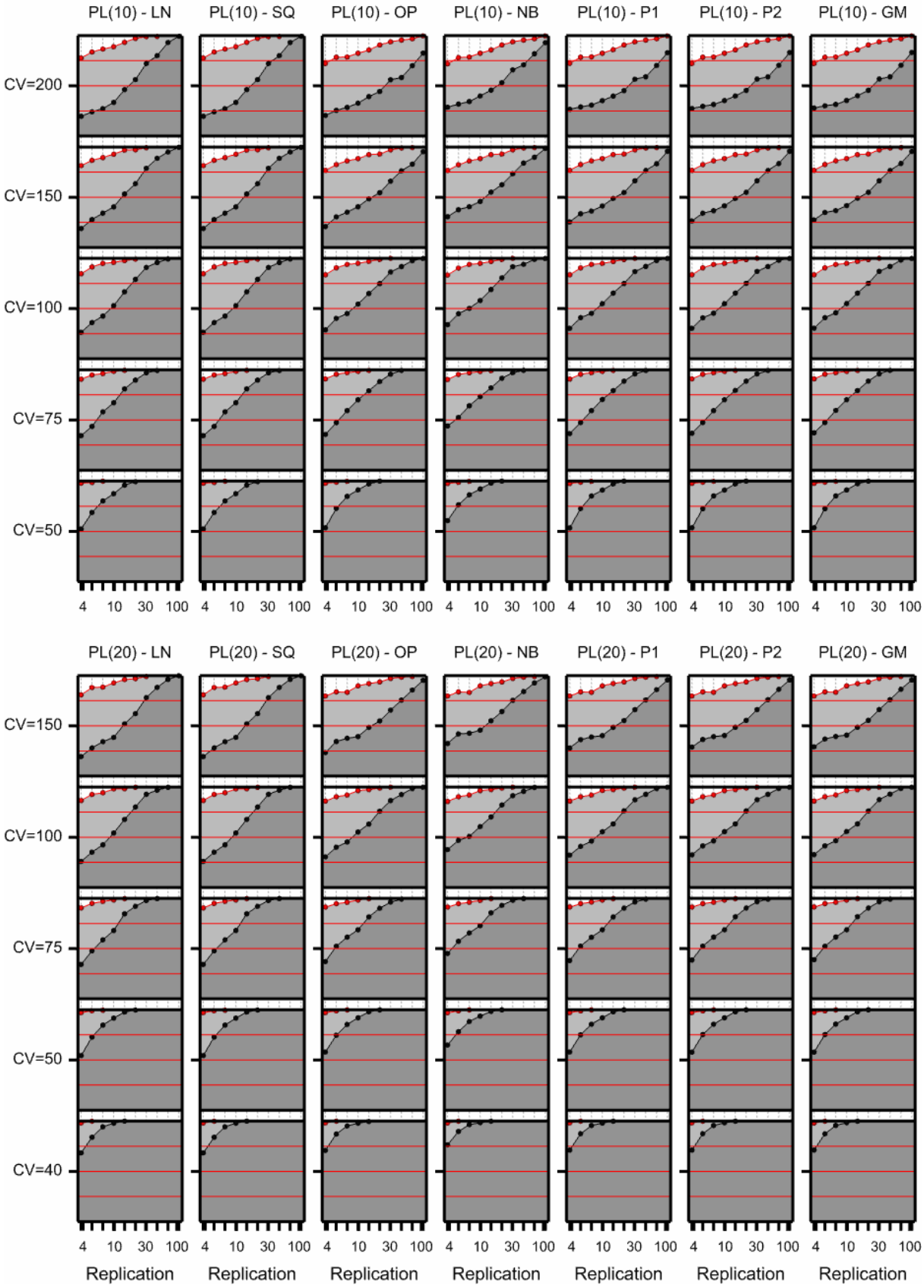
Appendix 2 G1: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 1



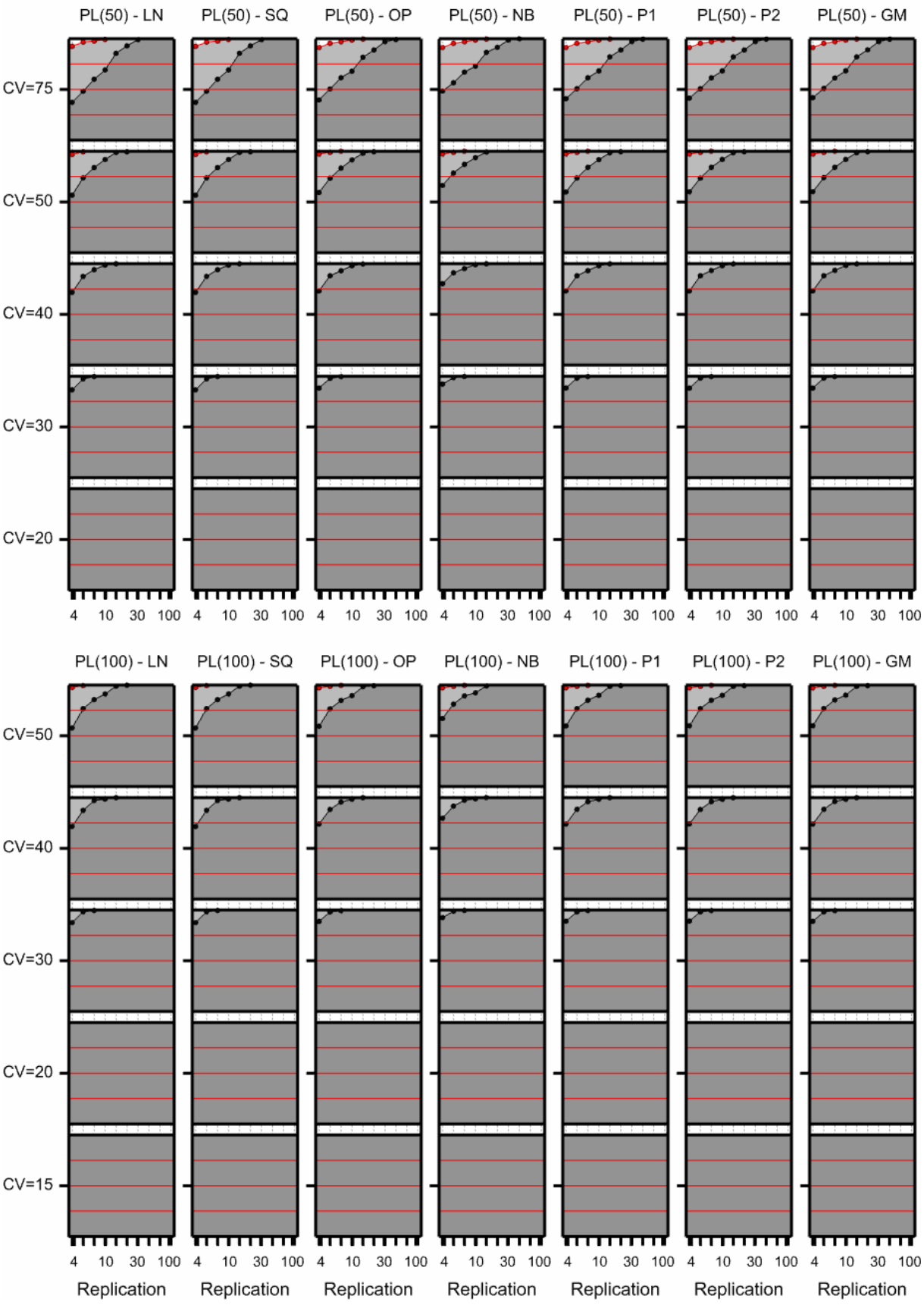
Appendix 2 G2: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 1



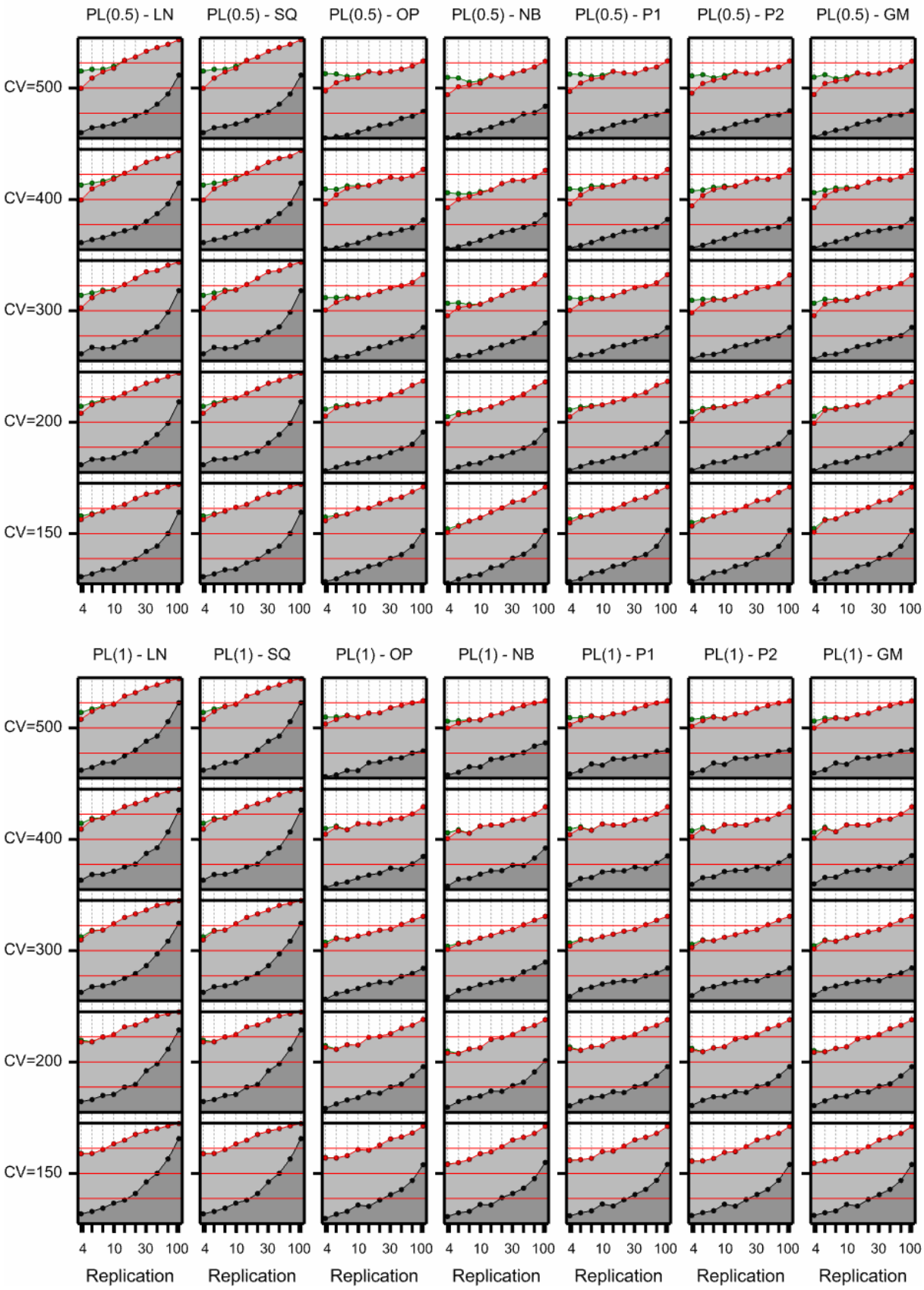
Appendix 2 G3: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 1



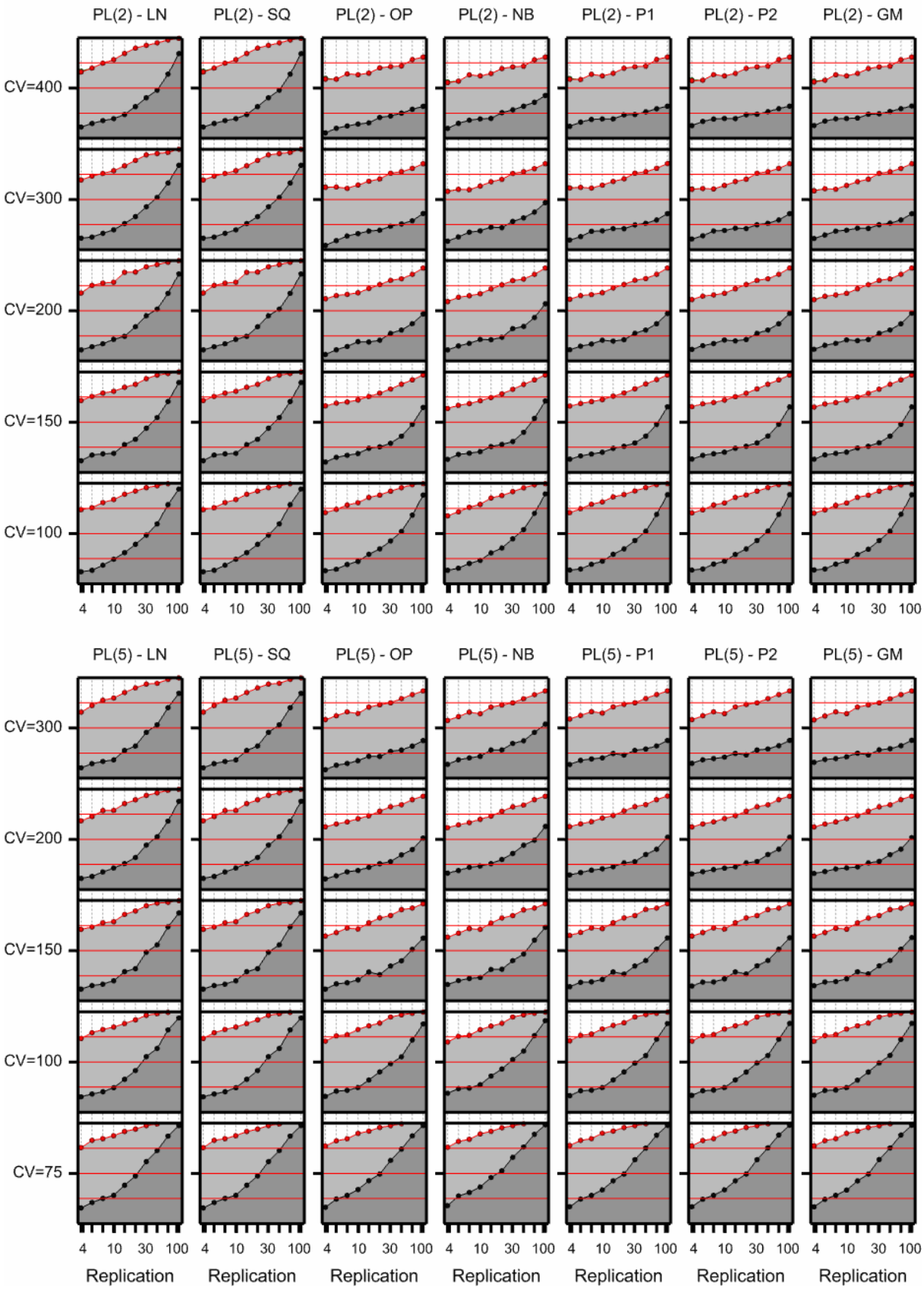
Appendix 2 G4: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 1



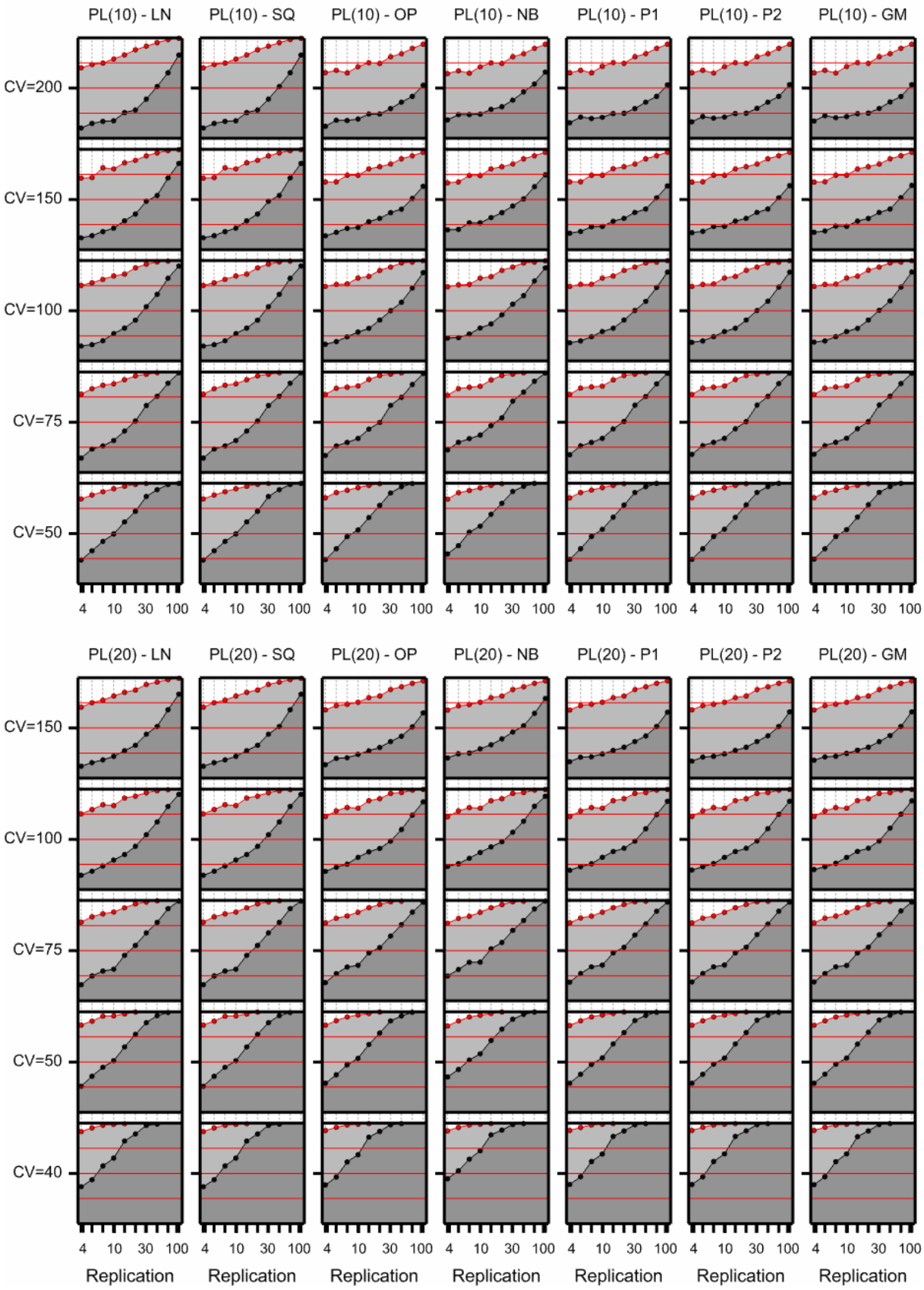
Appendix 2 G5: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.75



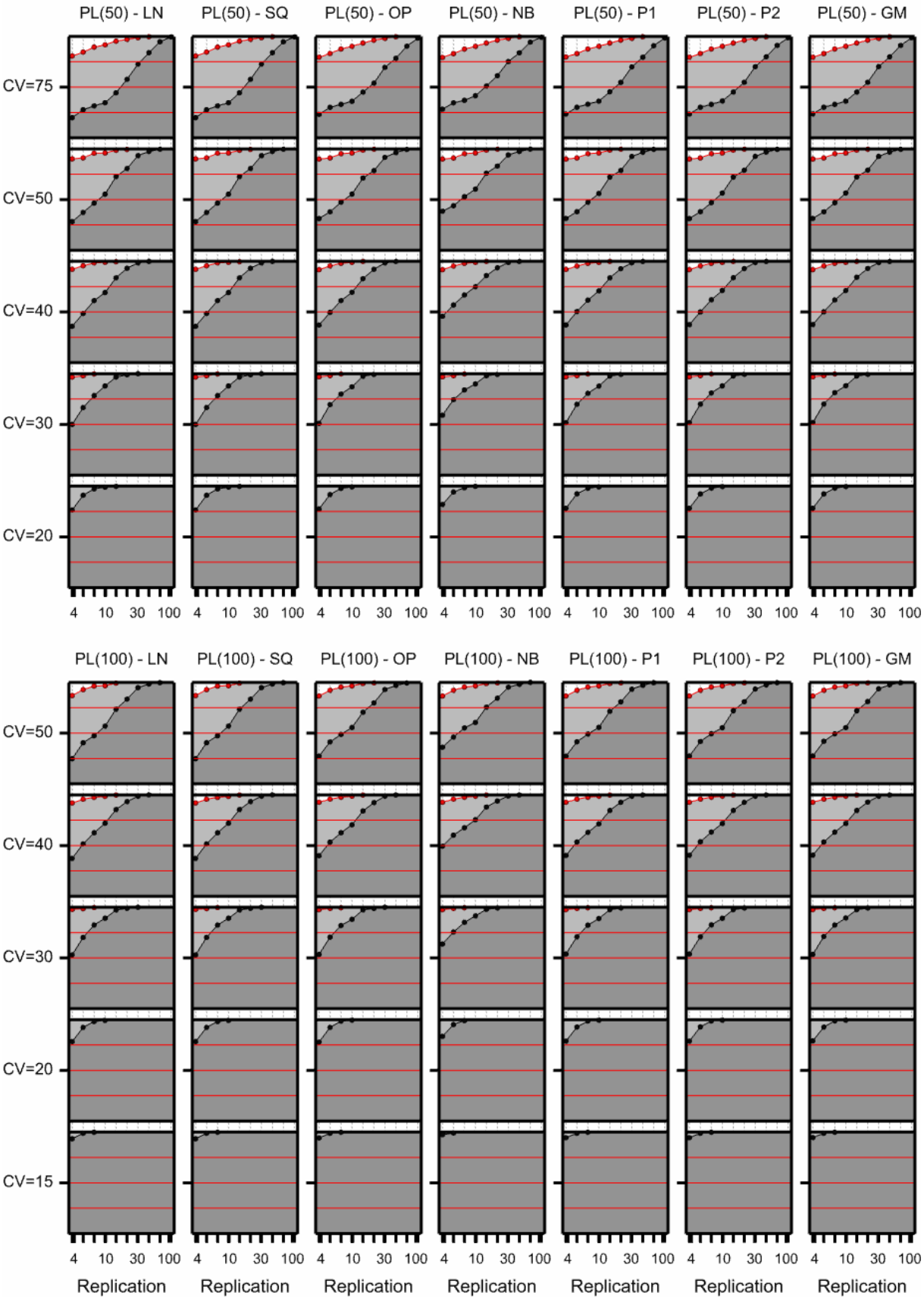
Appendix 2 G6: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.75



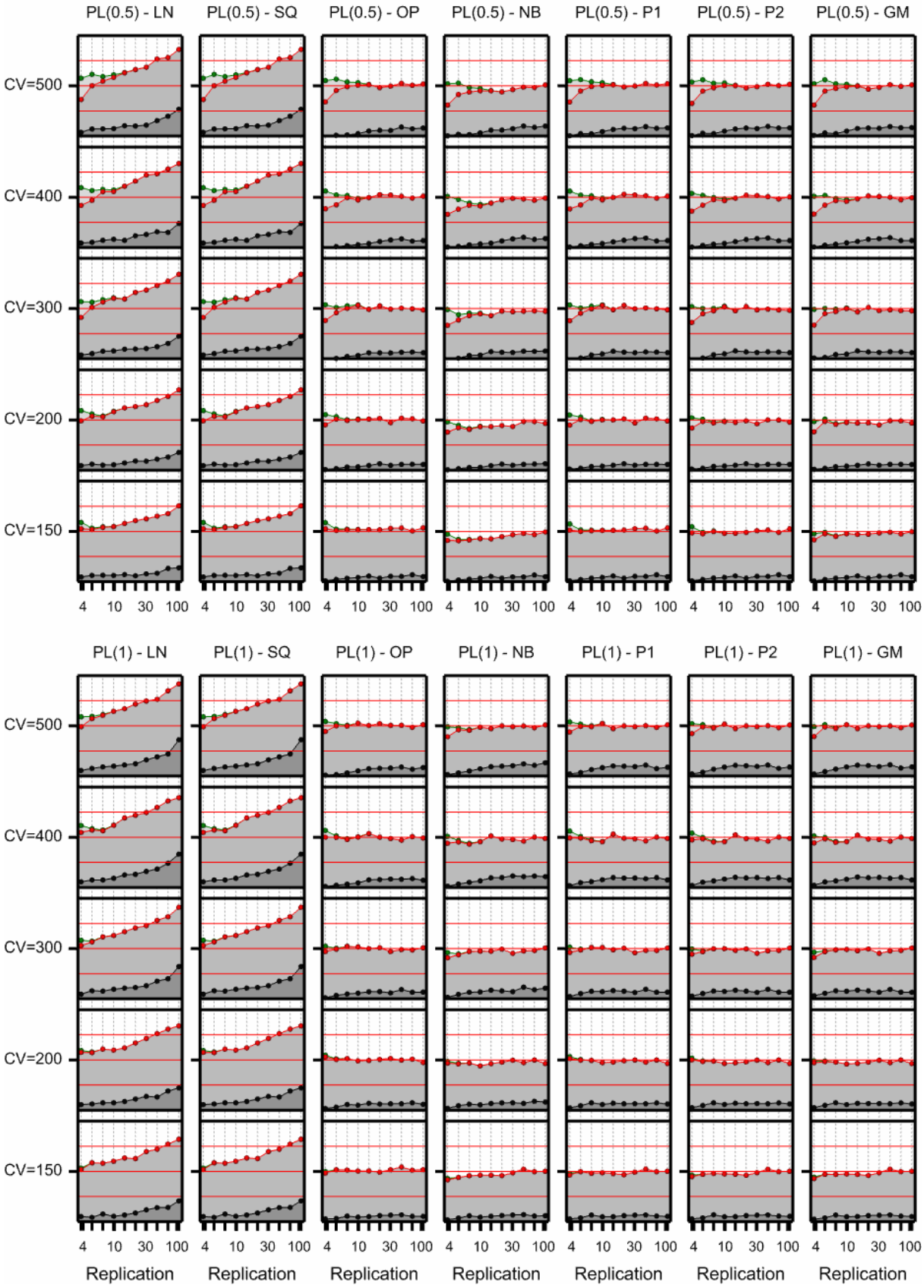
Appendix 2 G7: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.75



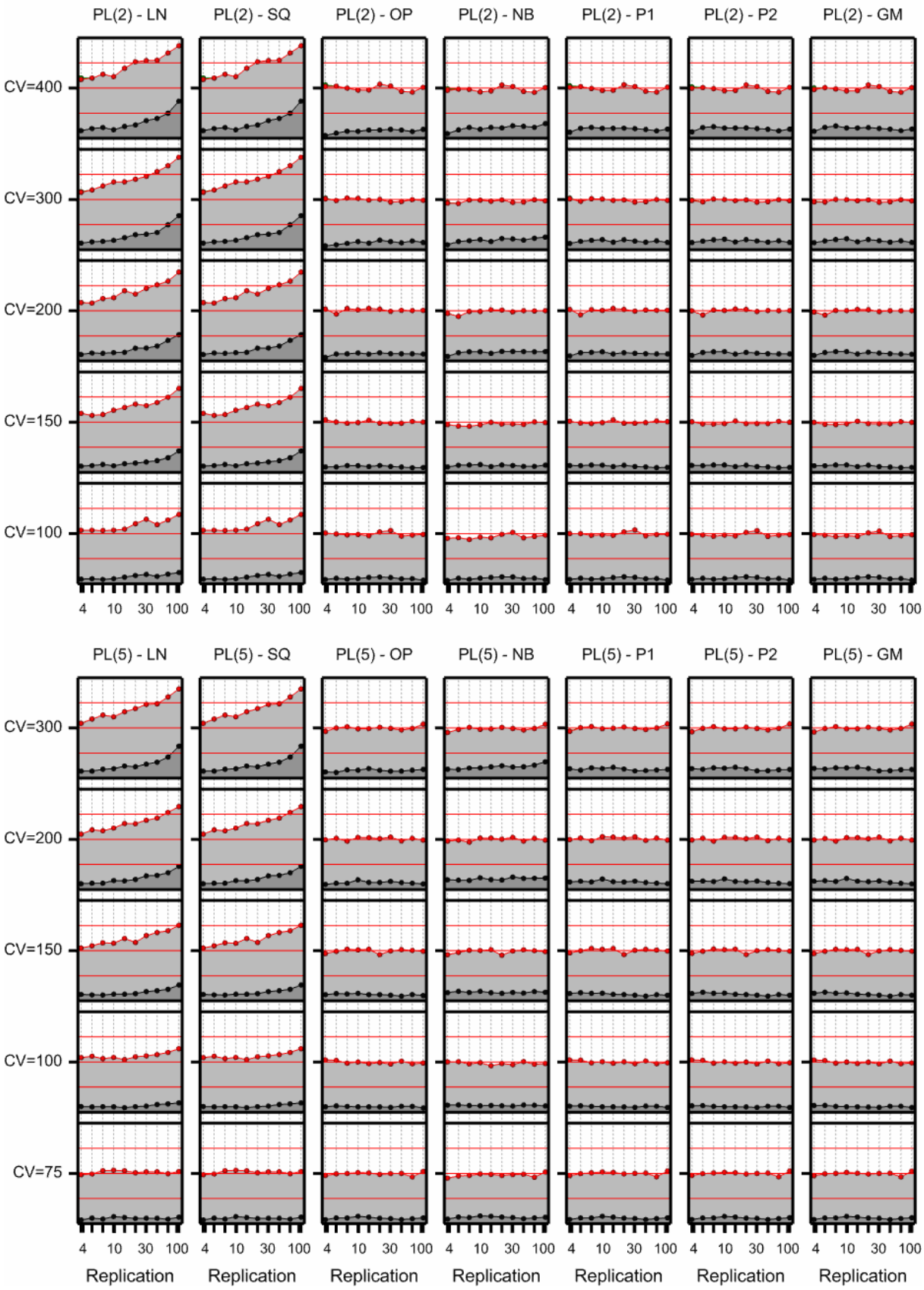
Appendix 2 G8: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.75



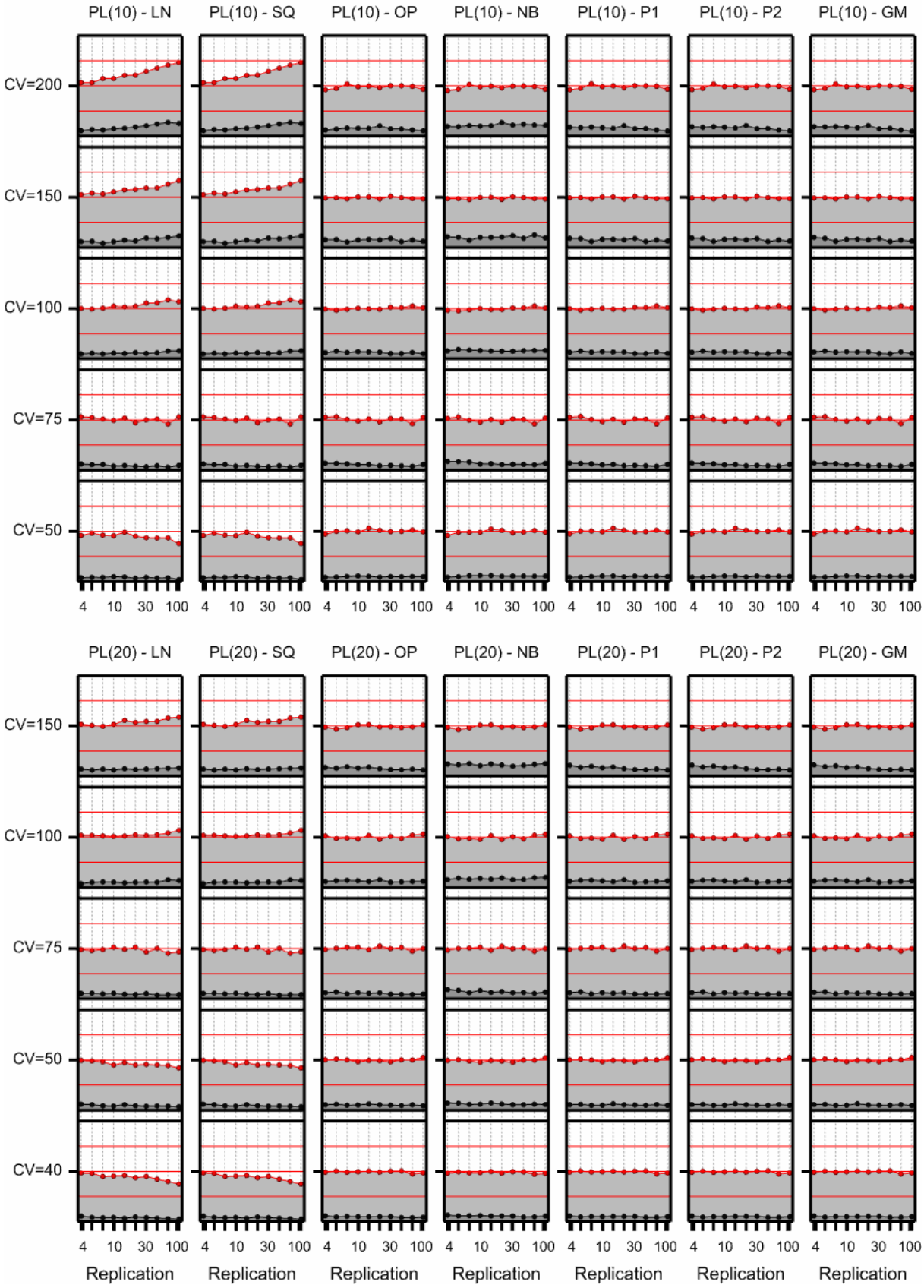
Appendix 2 G9: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.5



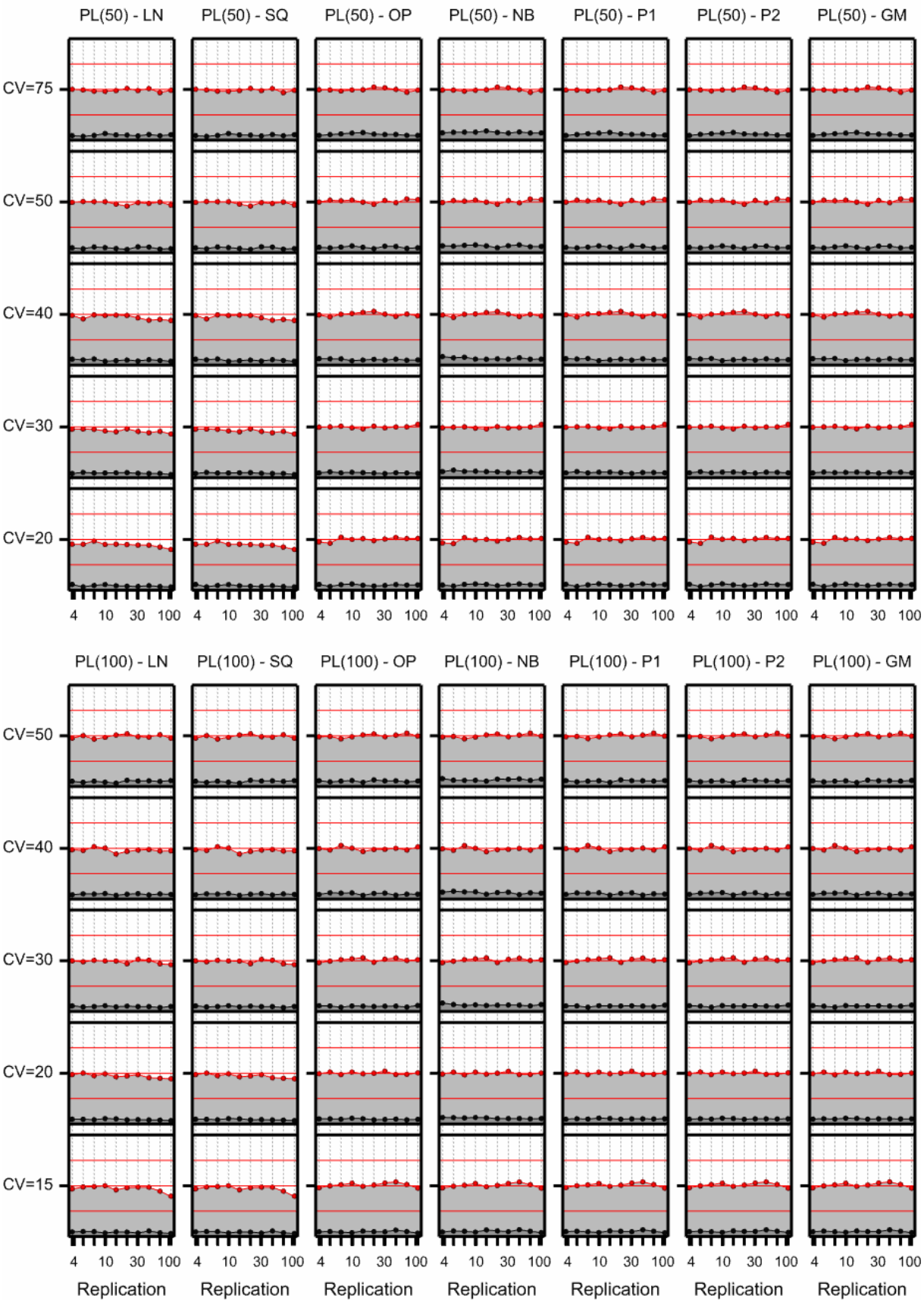
Appendix 2 G10: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.5



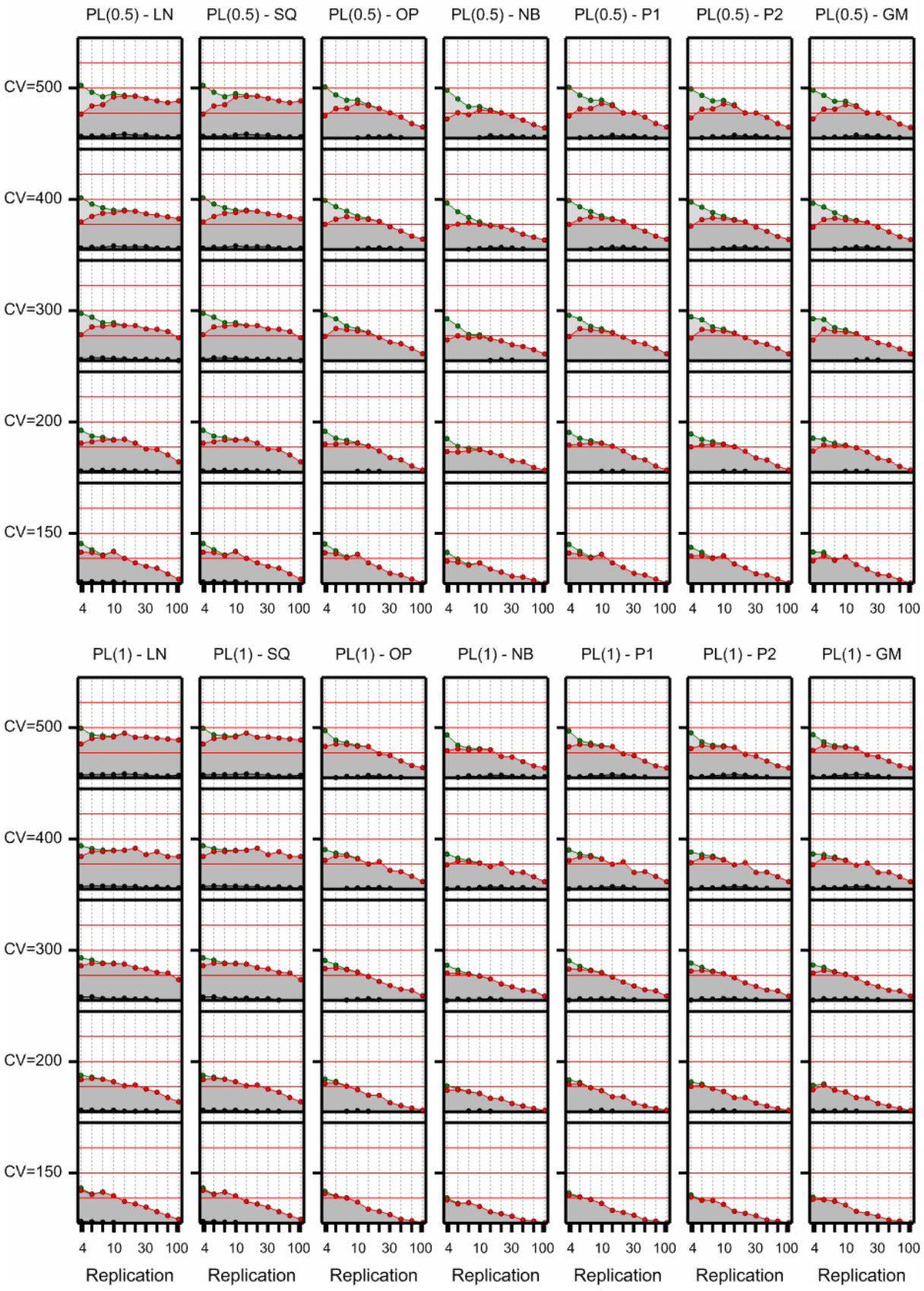
Appendix 2 G11: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.5



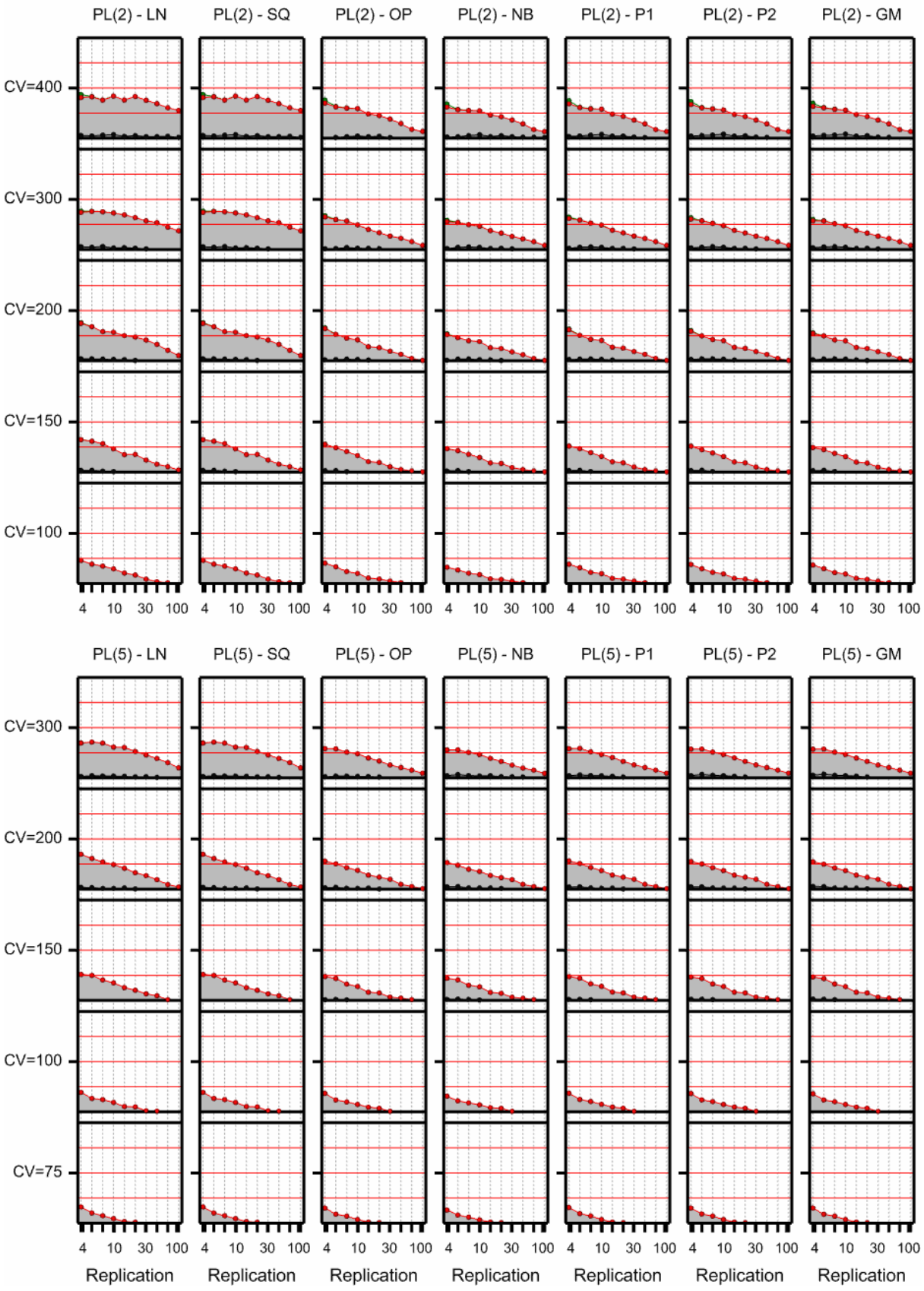
Appendix 2 G12: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.5



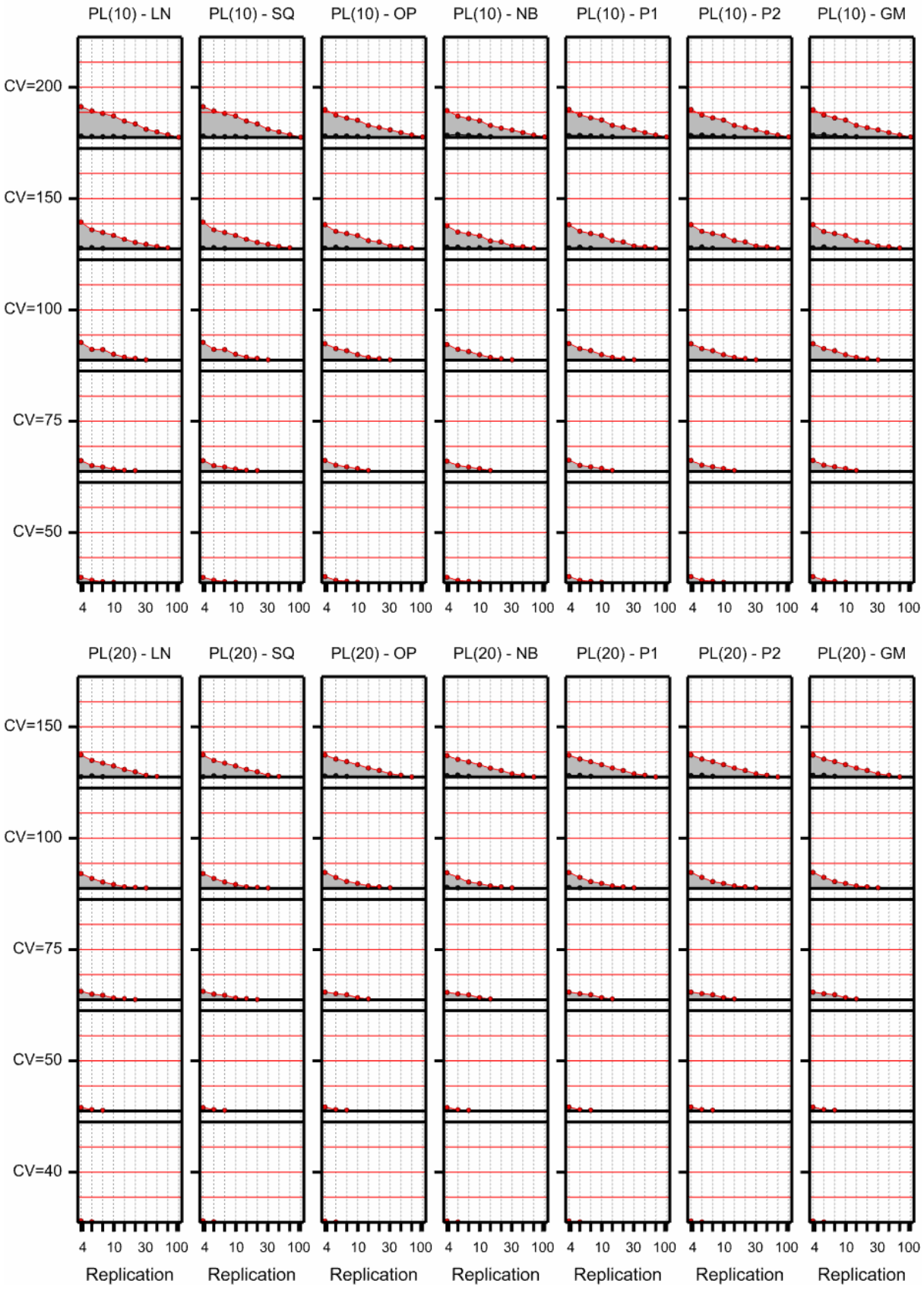
Appendix 2 G13: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.25



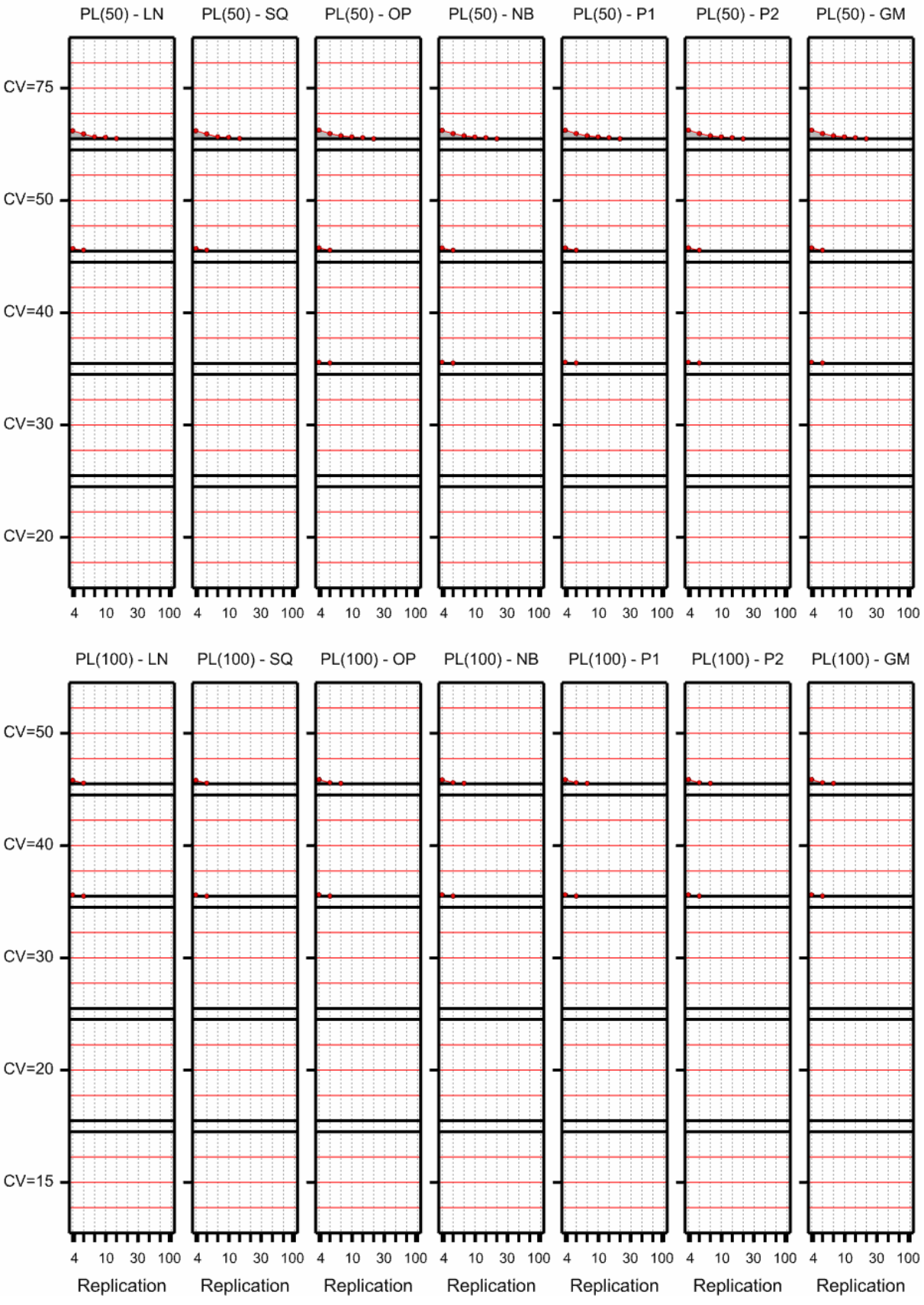
Appendix 2 G14: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.25



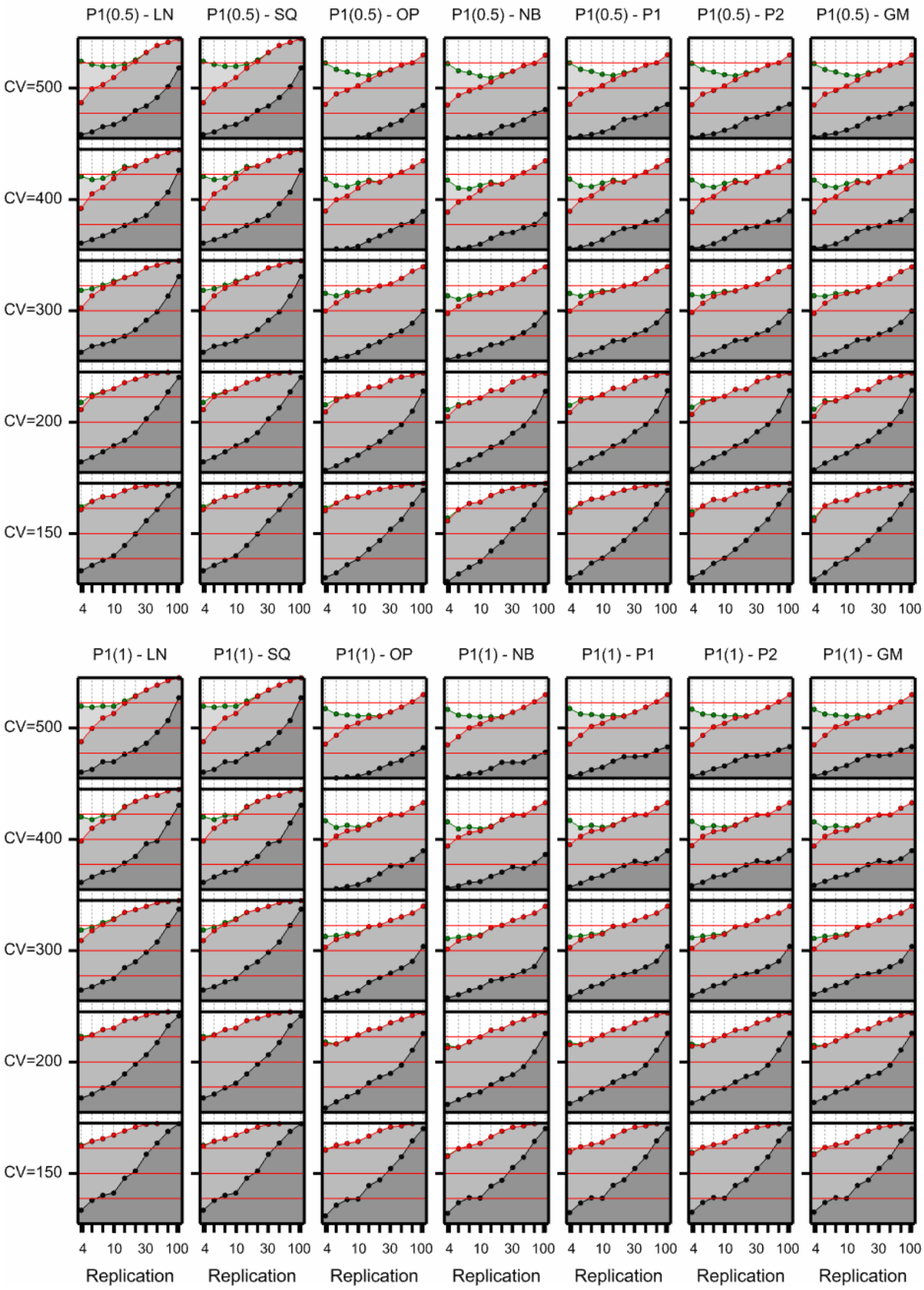
Appendix 2 G15: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.25



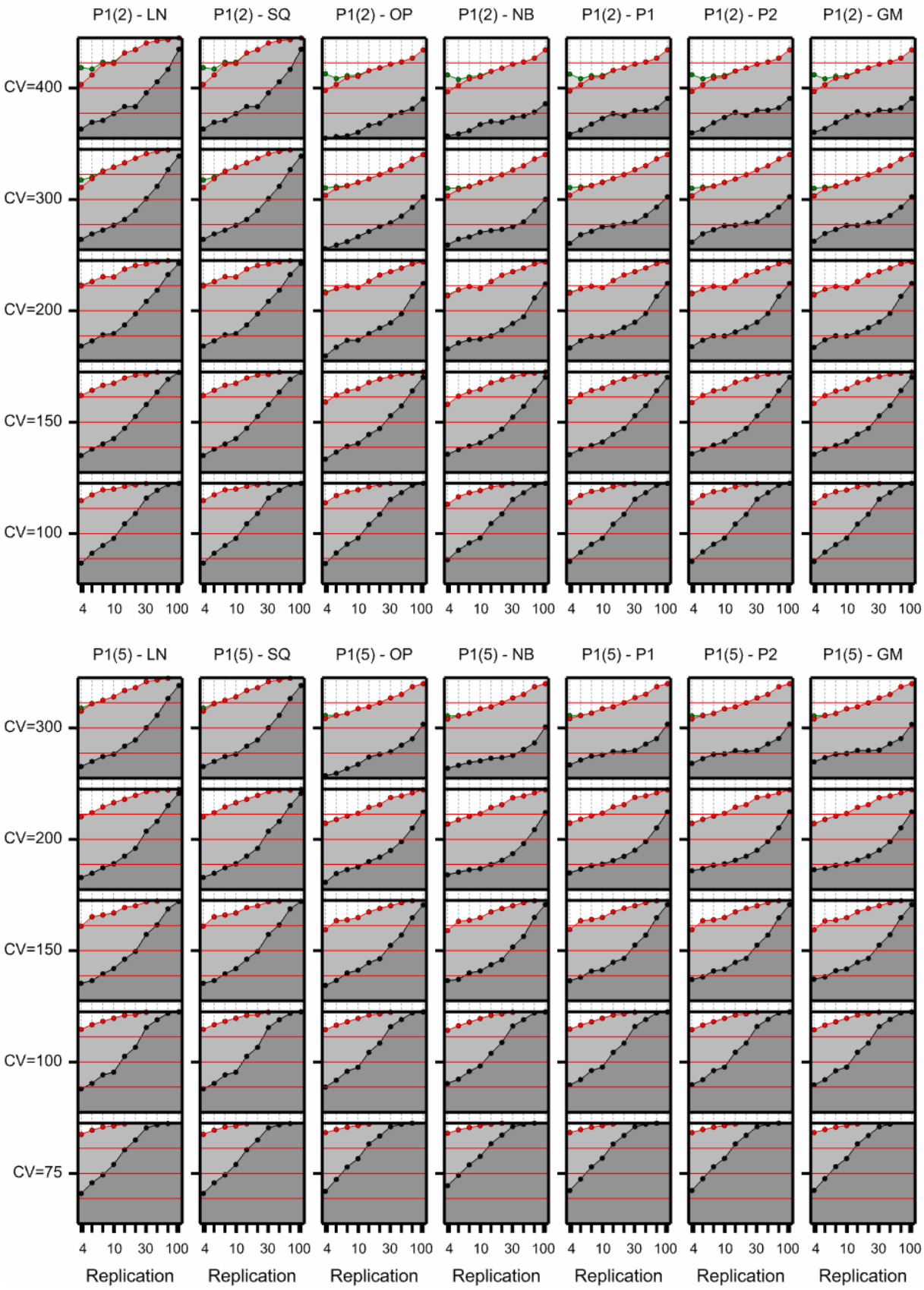
Appendix 2 G16: Power of equivalence test for Poisson-LogNormal; LOC=0.5; Q = 0.25



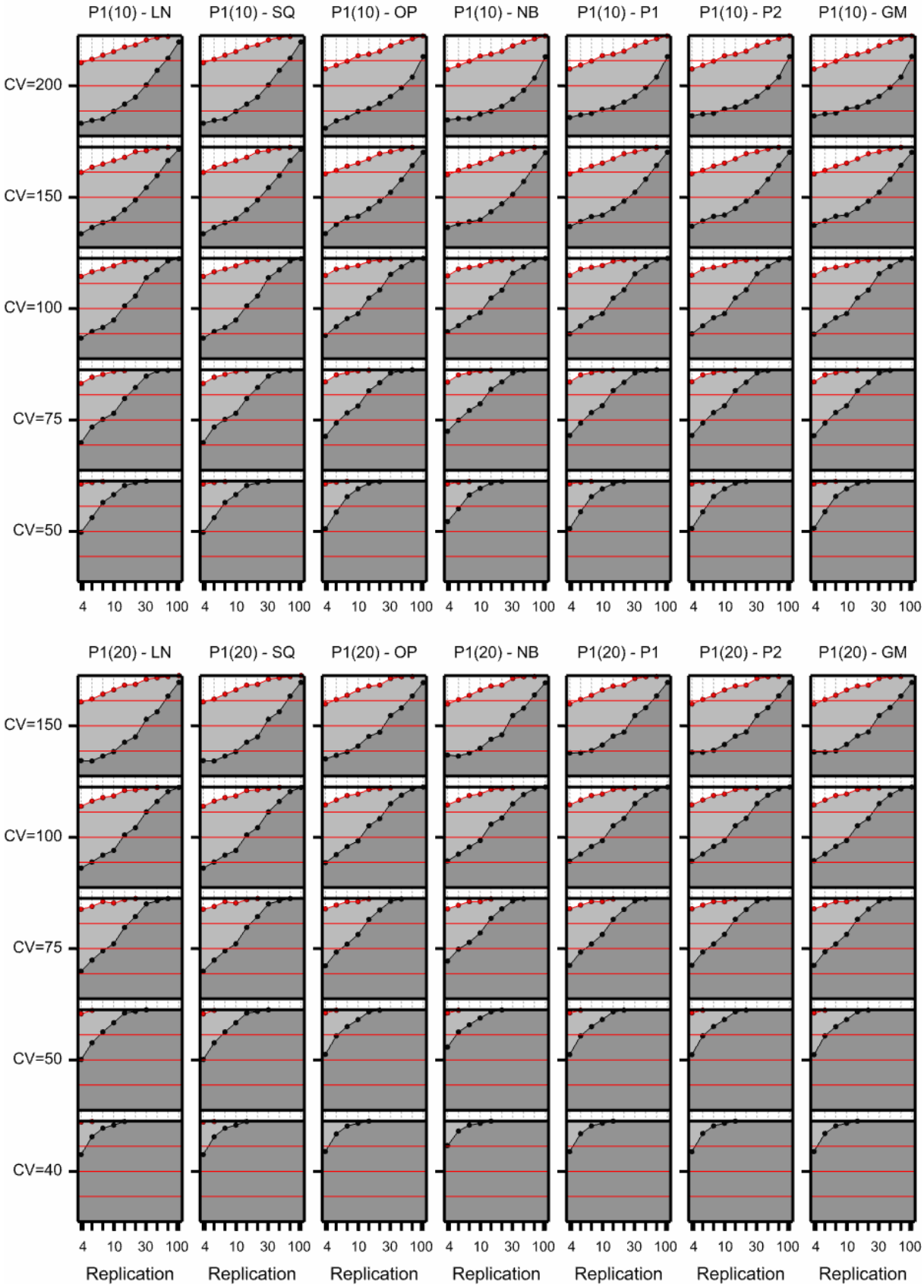
Appendix 2 H1: Power of equivalence test for Power(1.5); LOC=0.5; Q = 1



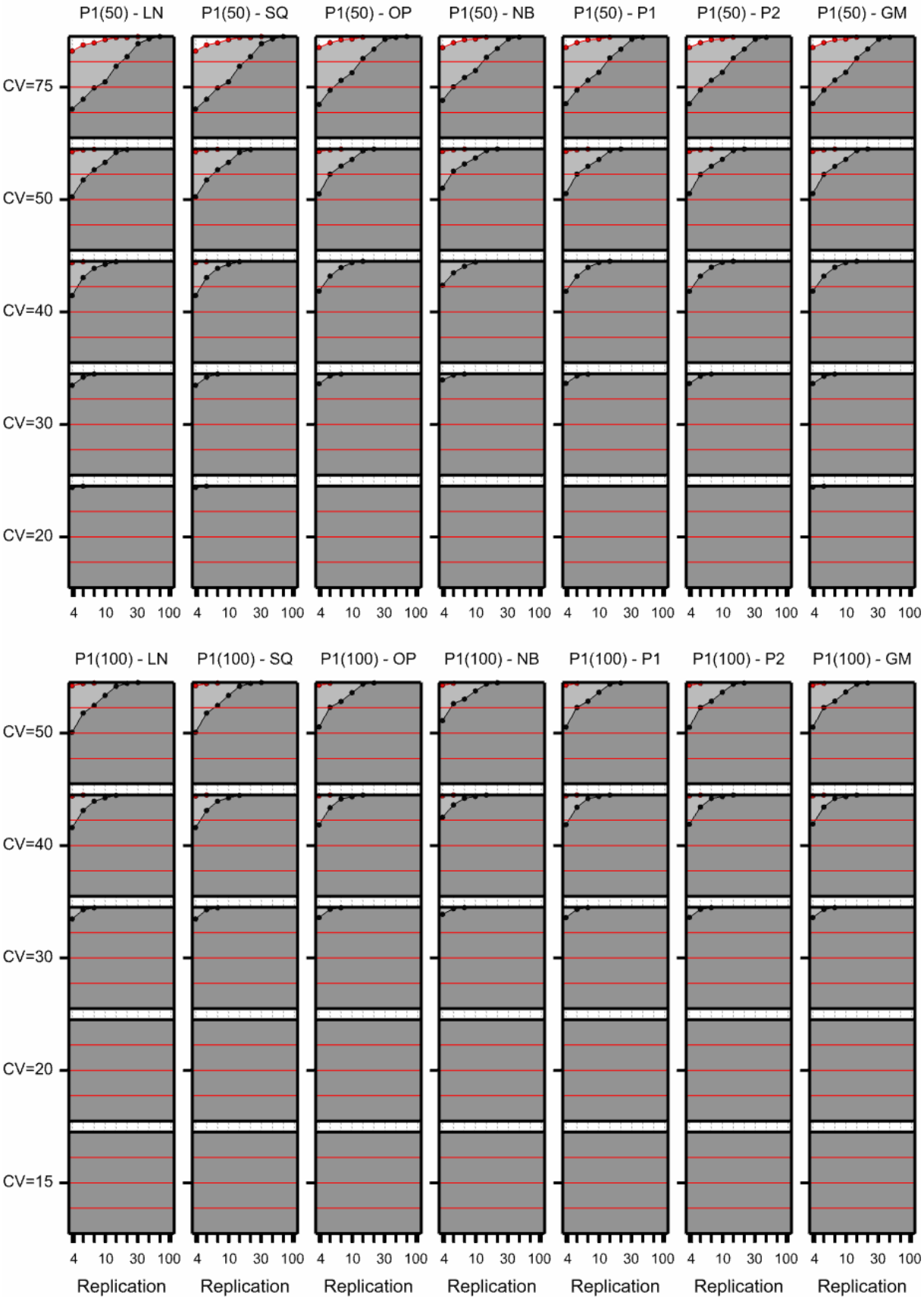
Appendix 2 H2: Power of equivalence test for Power(1.5); LOC=0.5; Q = 1



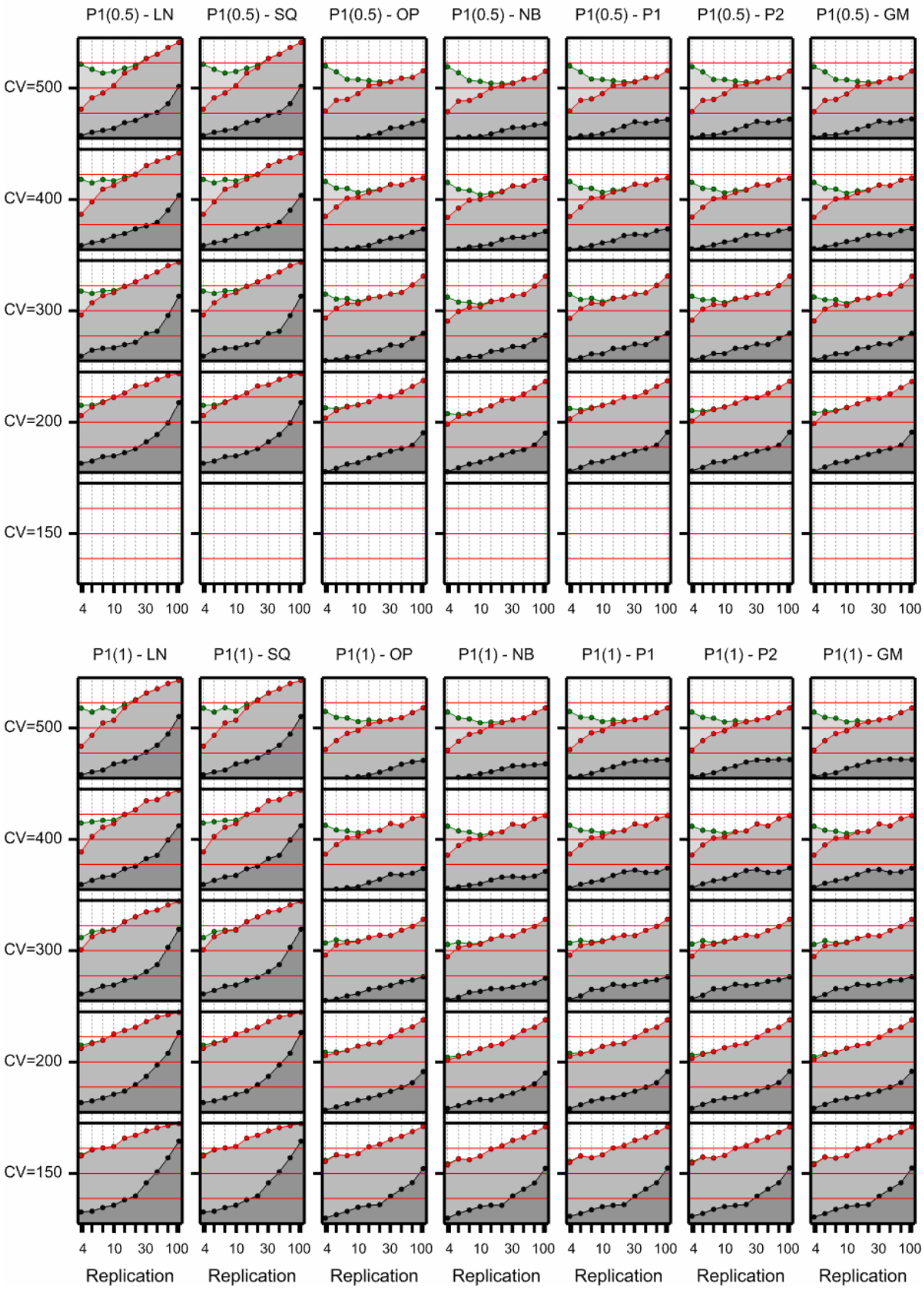
Appendix 2 H3: Power of equivalence test for Power(1.5); LOC=0.5; Q = 1



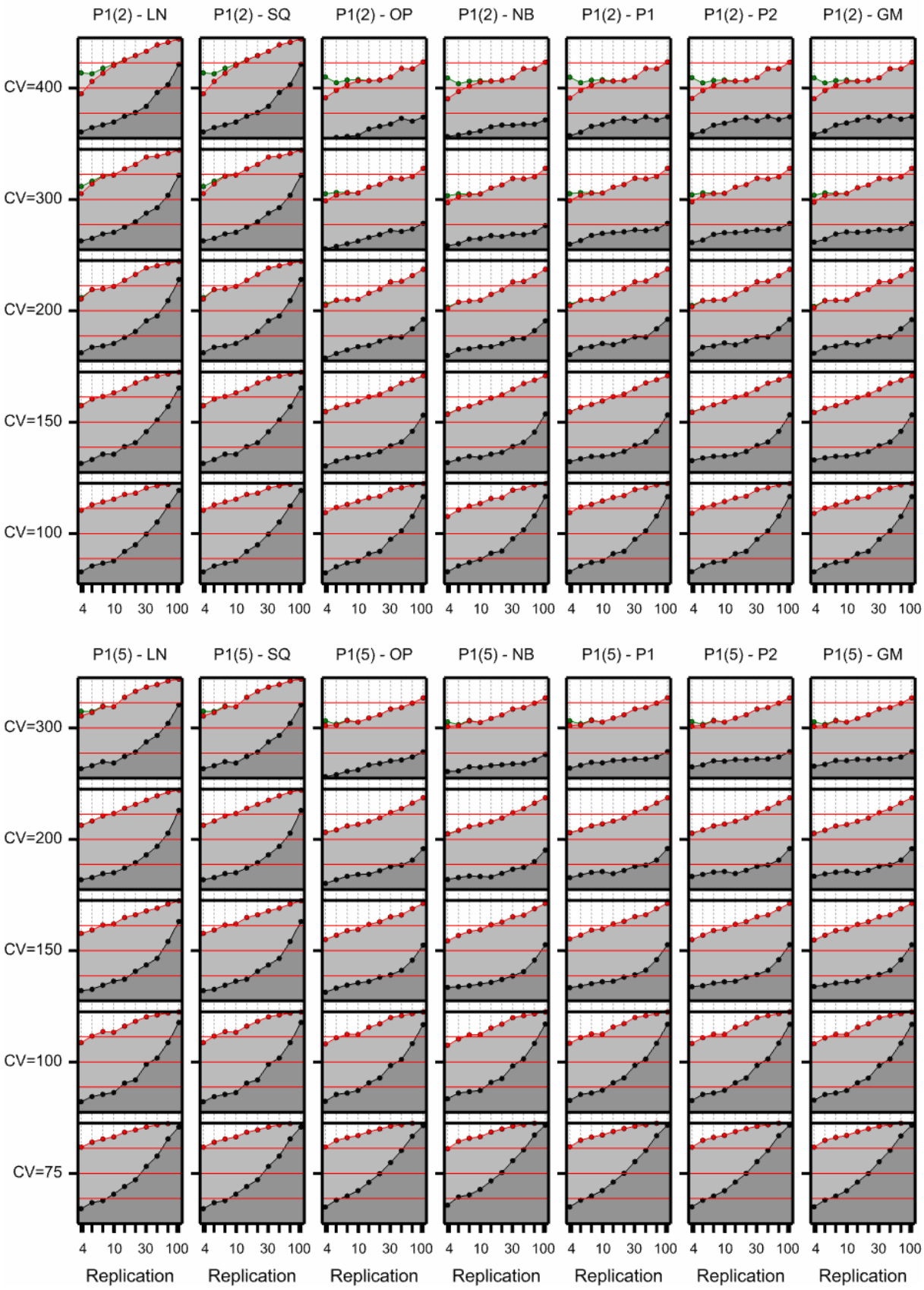
Appendix 2 H4: Power of equivalence test for Power(1.5); LOC=0.5; Q = 1



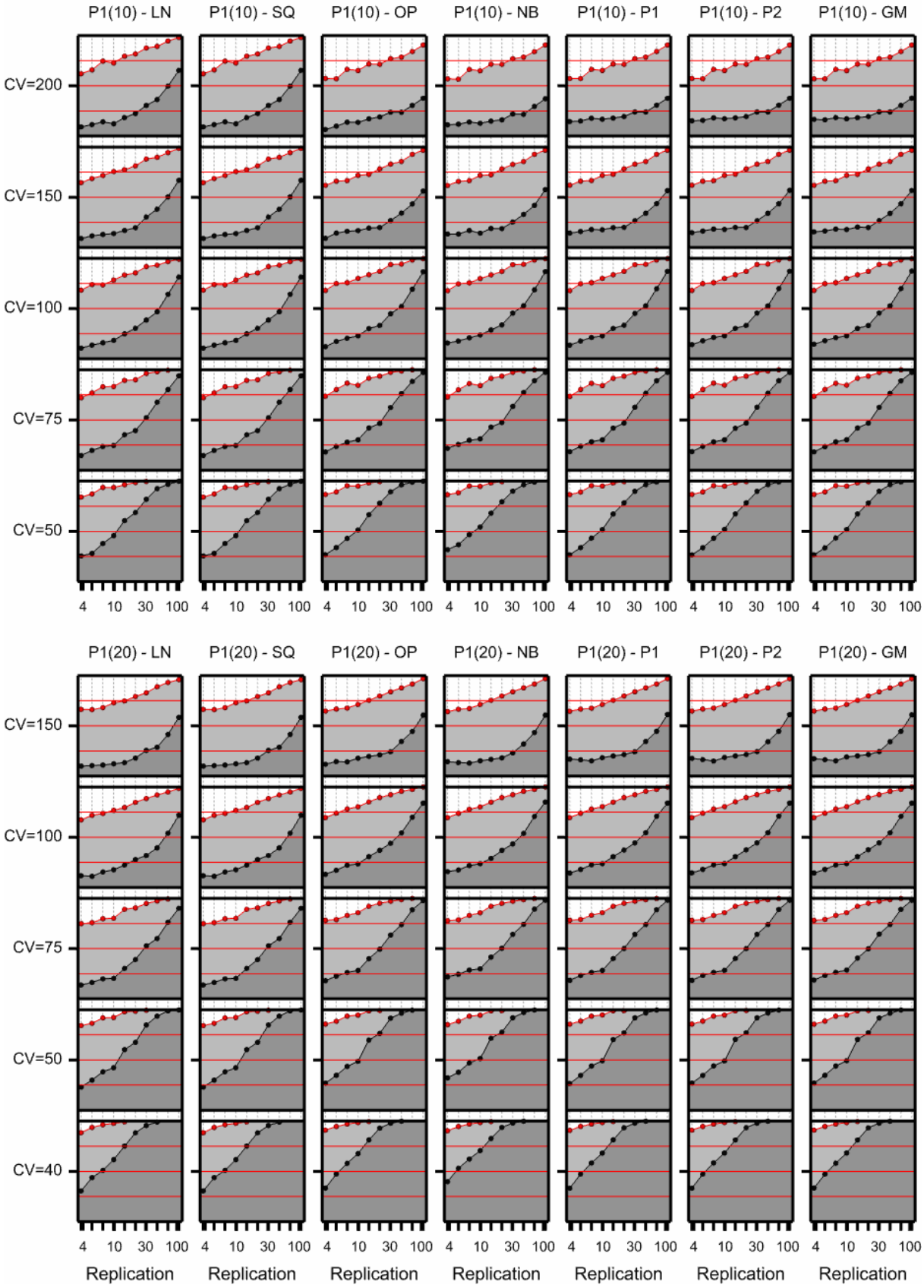
Appendix 2 H5: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.75



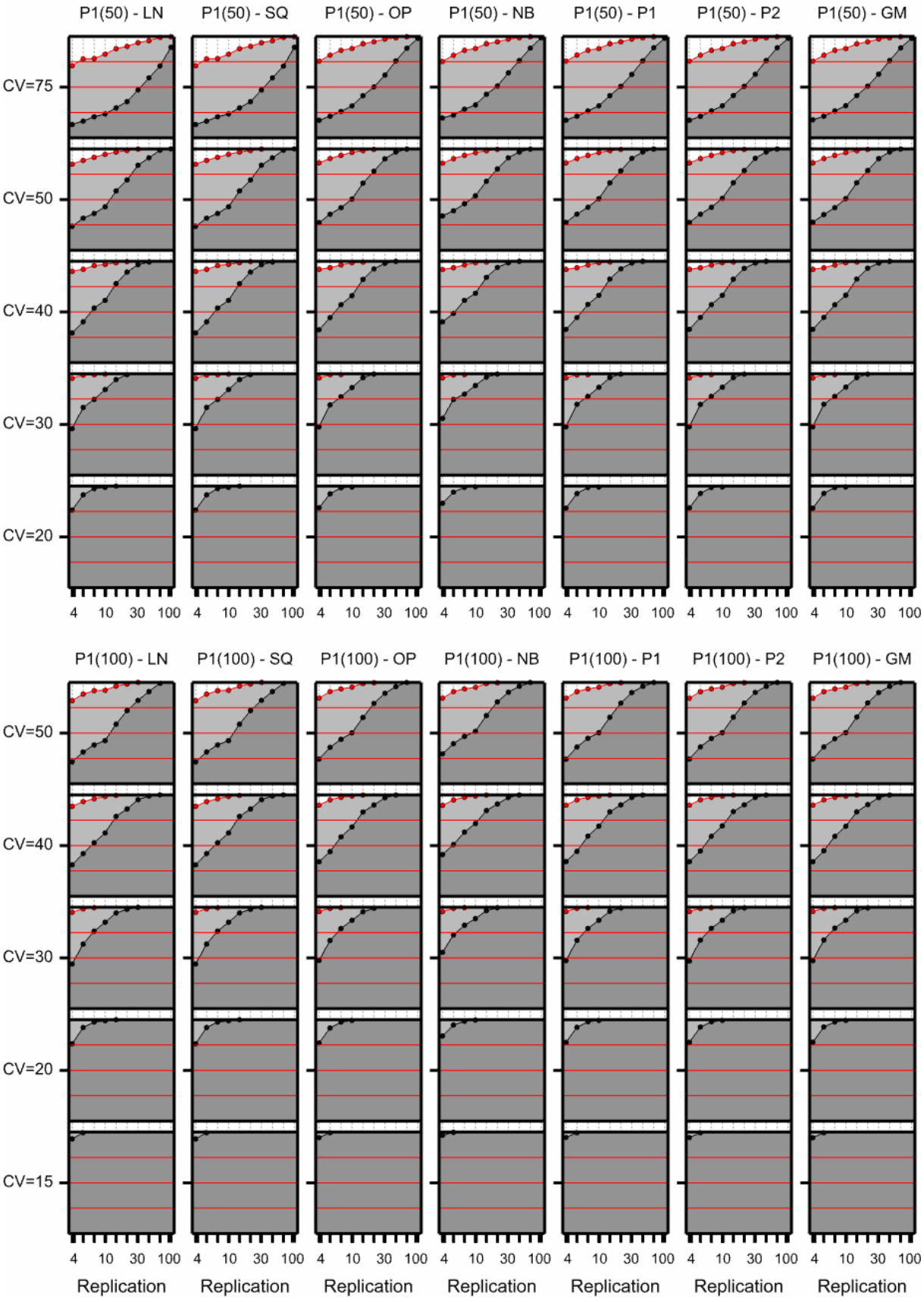
Appendix 2 H6: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.75



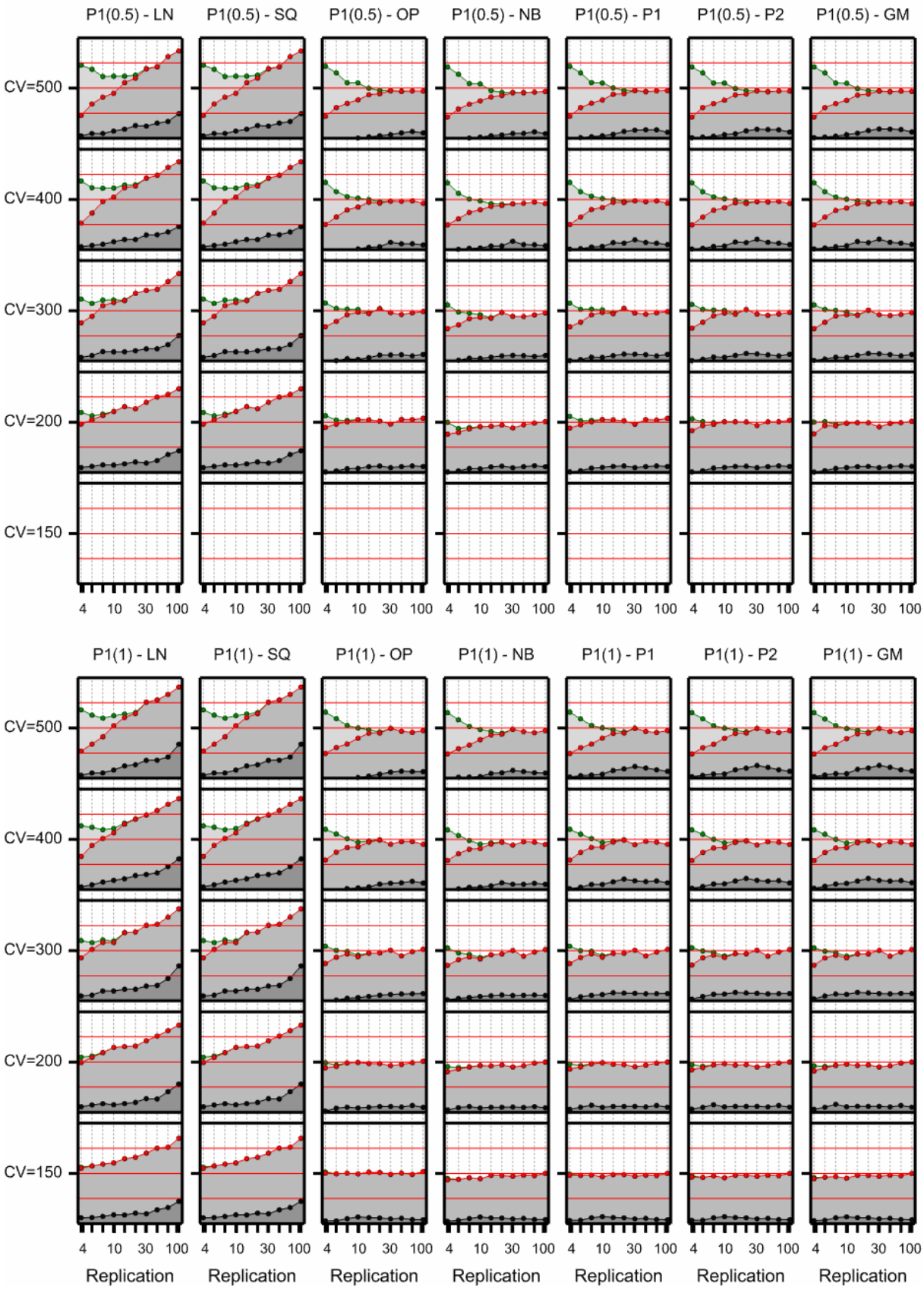
Appendix 2 H7: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.75



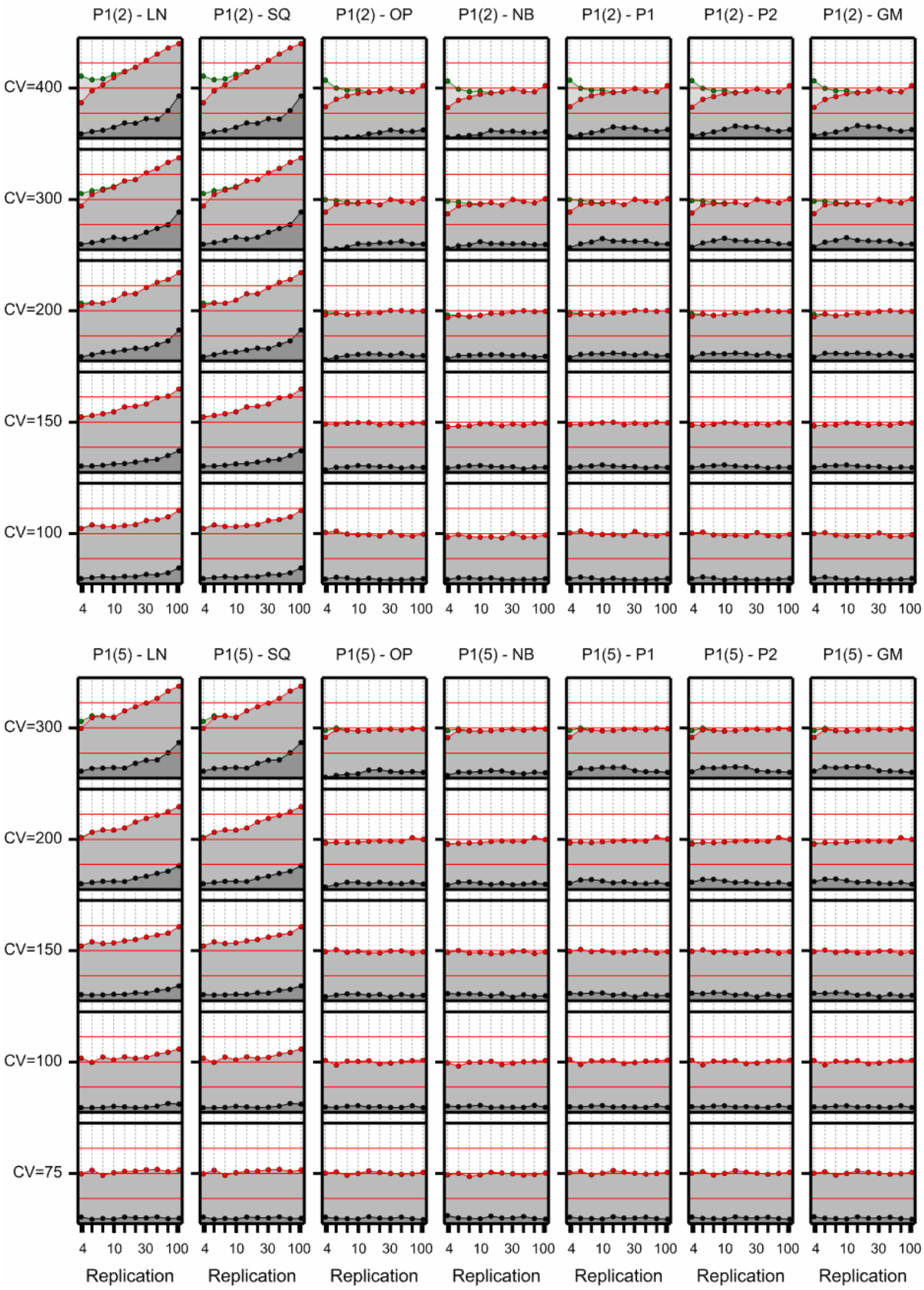
Appendix 2 H8: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.75



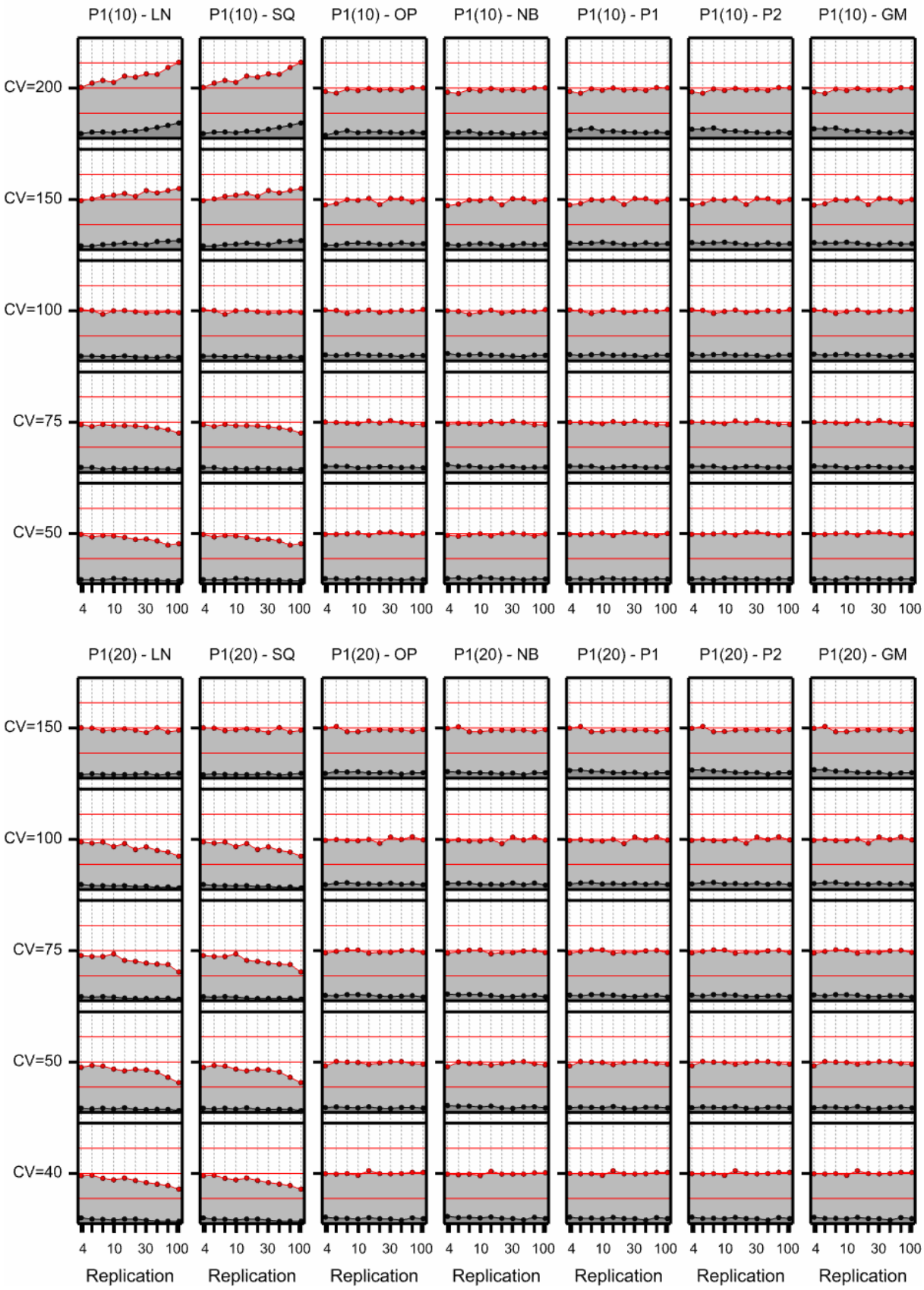
Appendix 2 H9: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.5



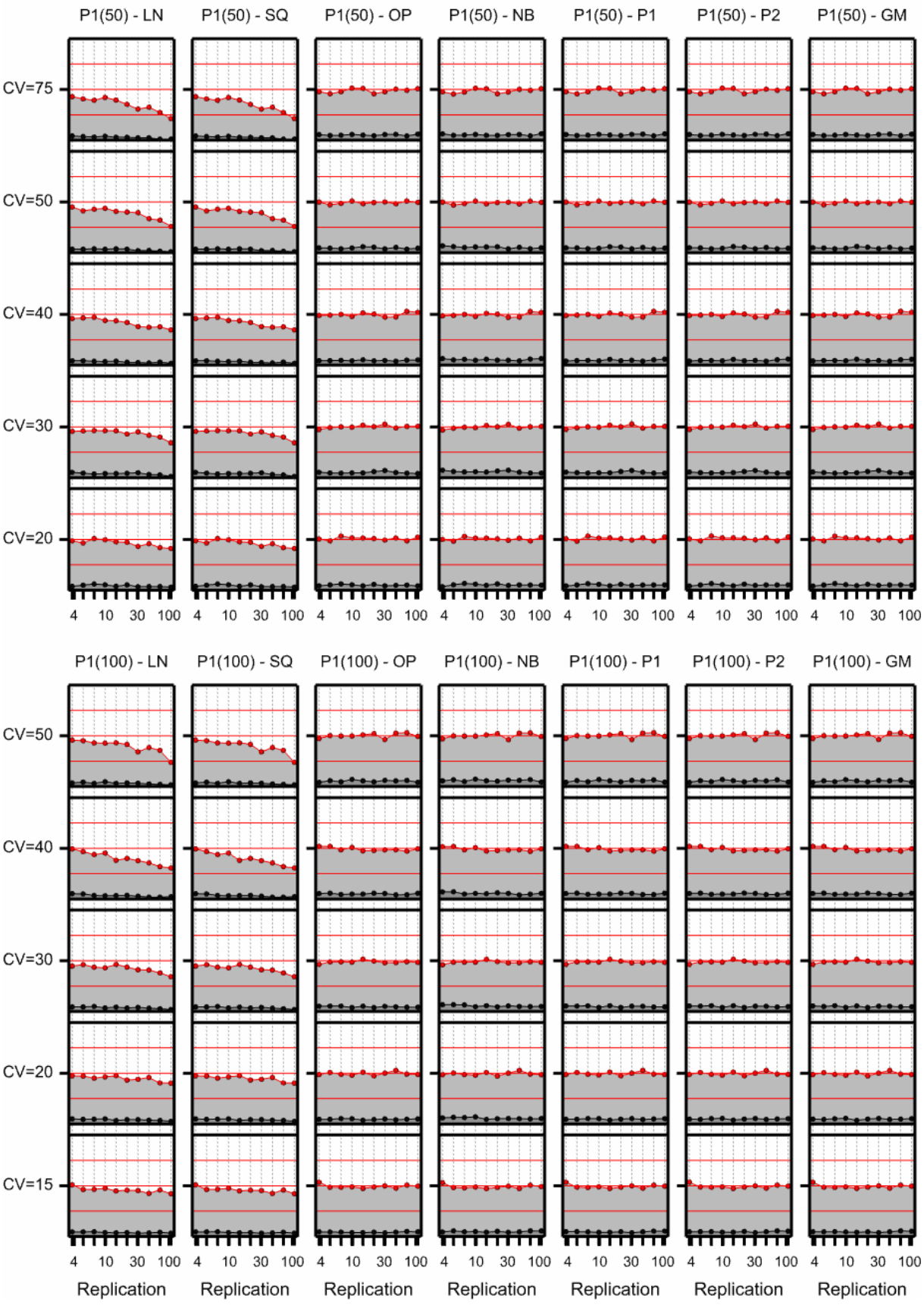
Appendix 2 H10: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.5



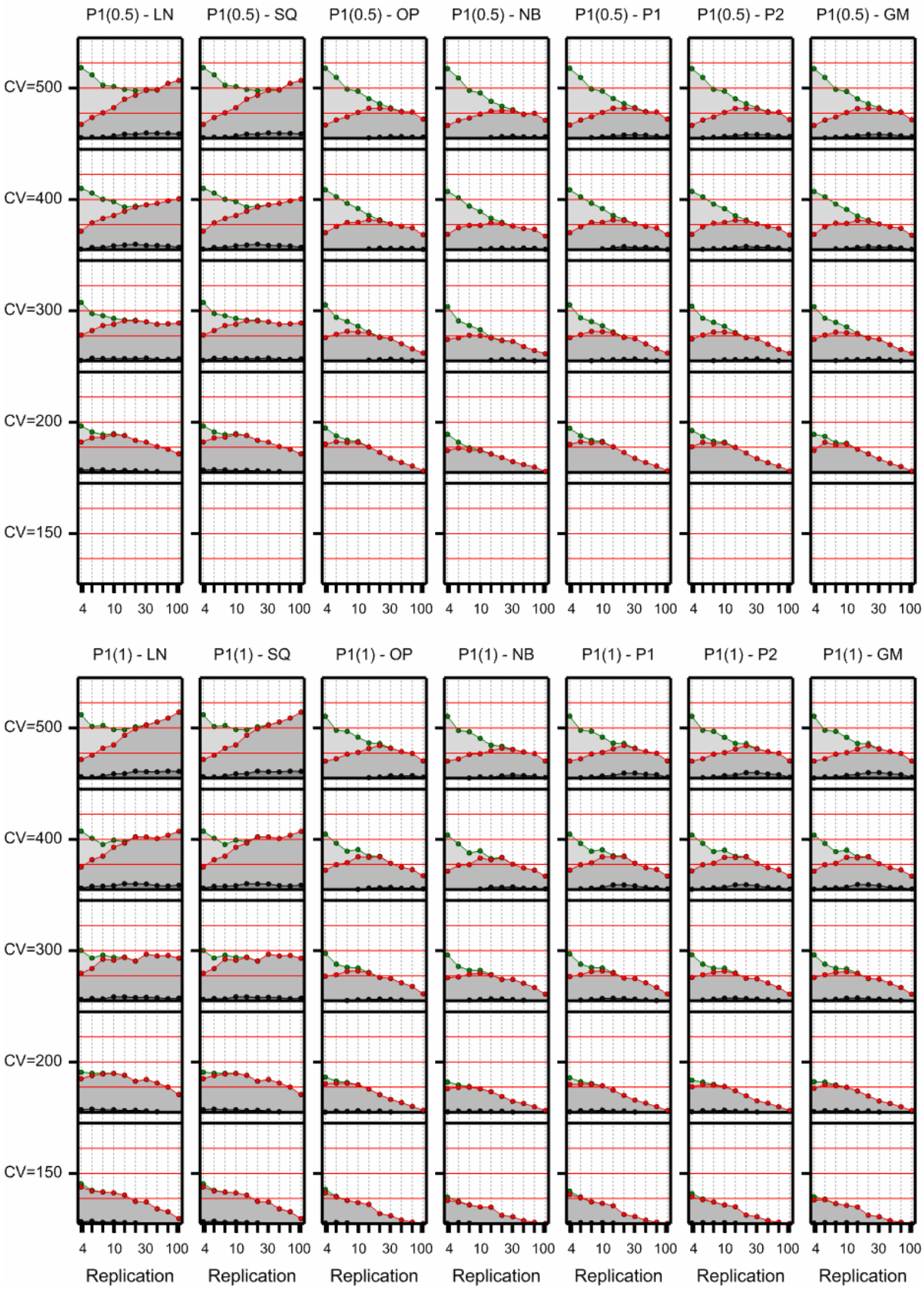
Appendix 2 H11: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.5



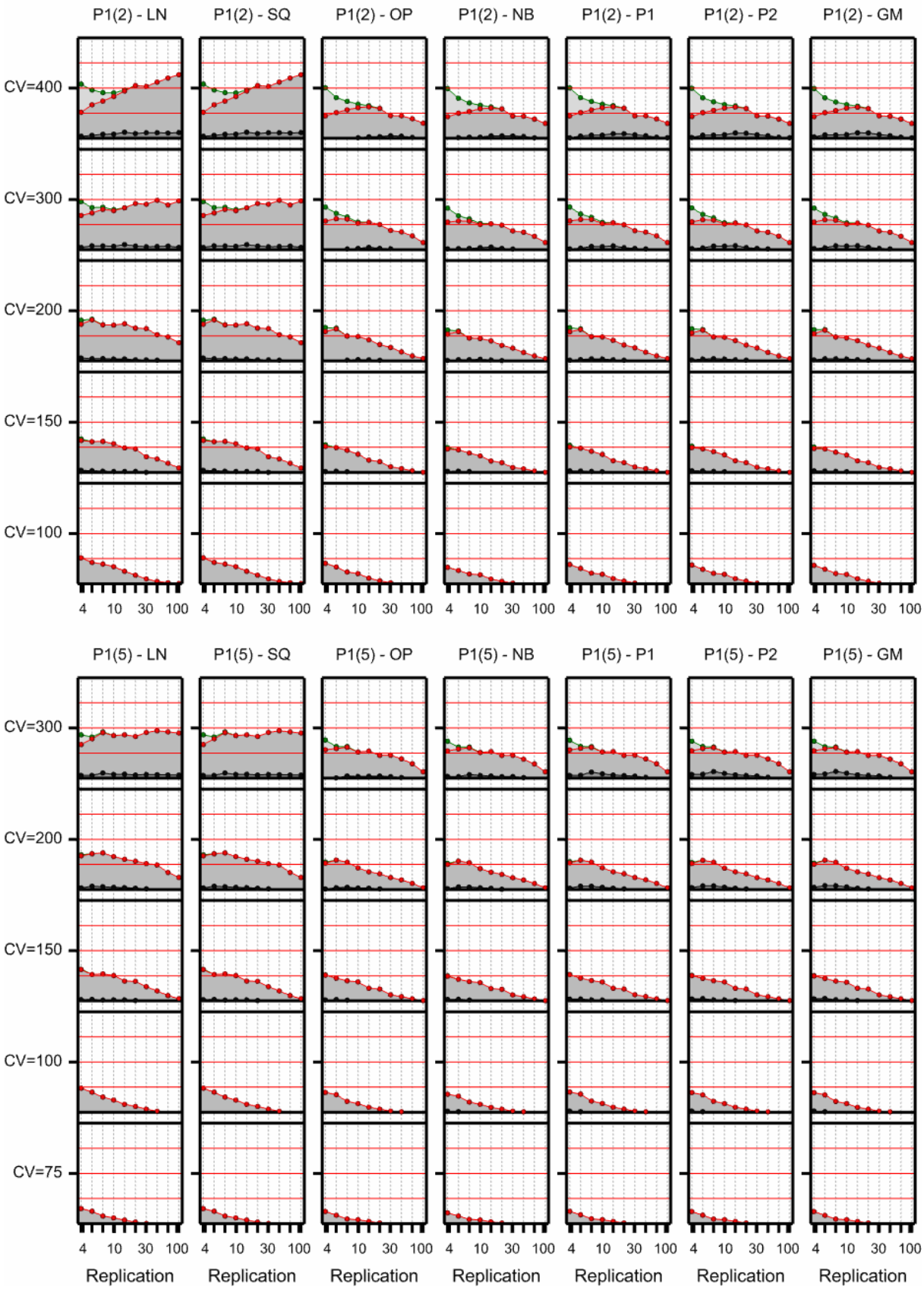
Appendix 2 H12: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.5



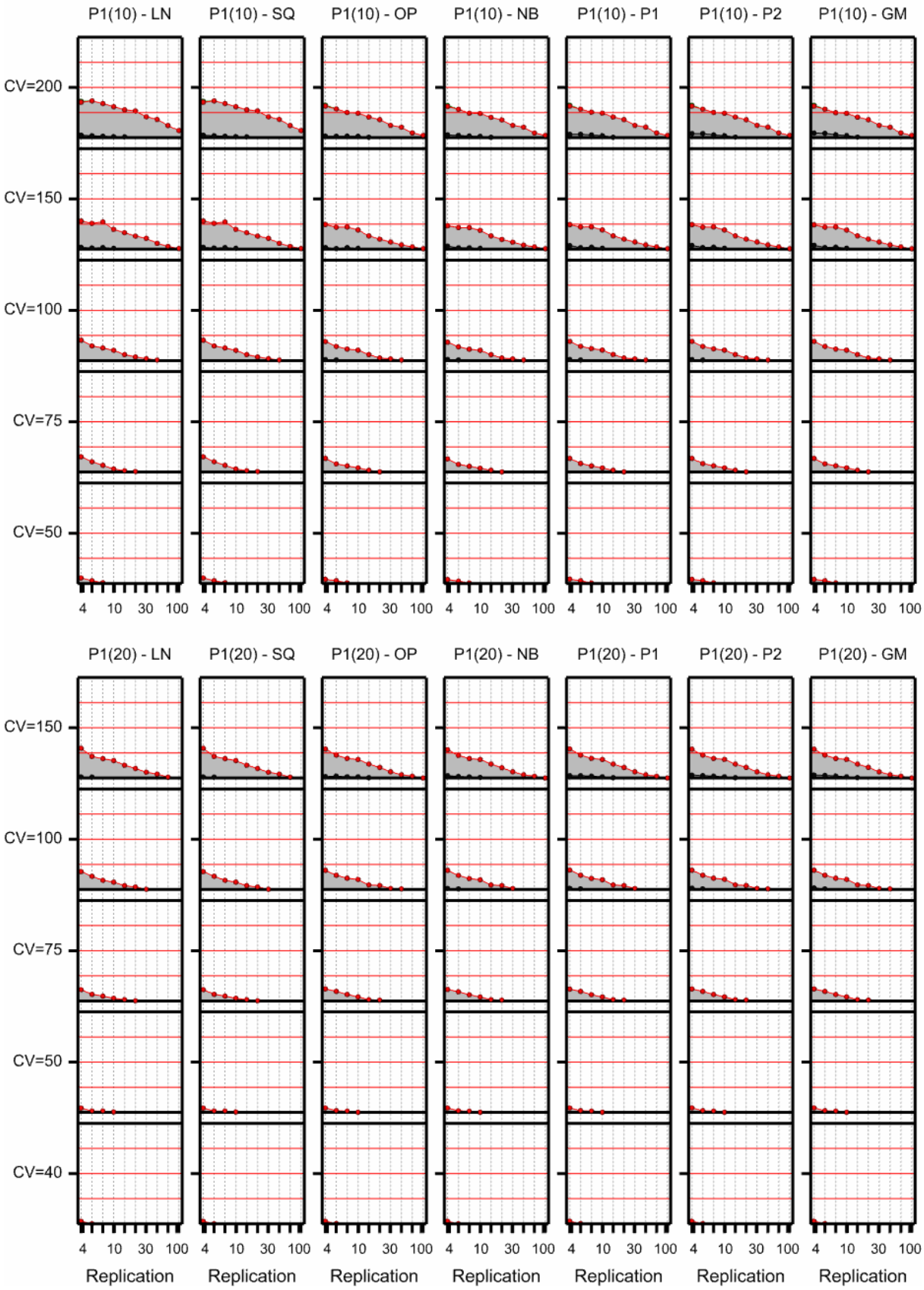
Appendix 2 H13: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.25



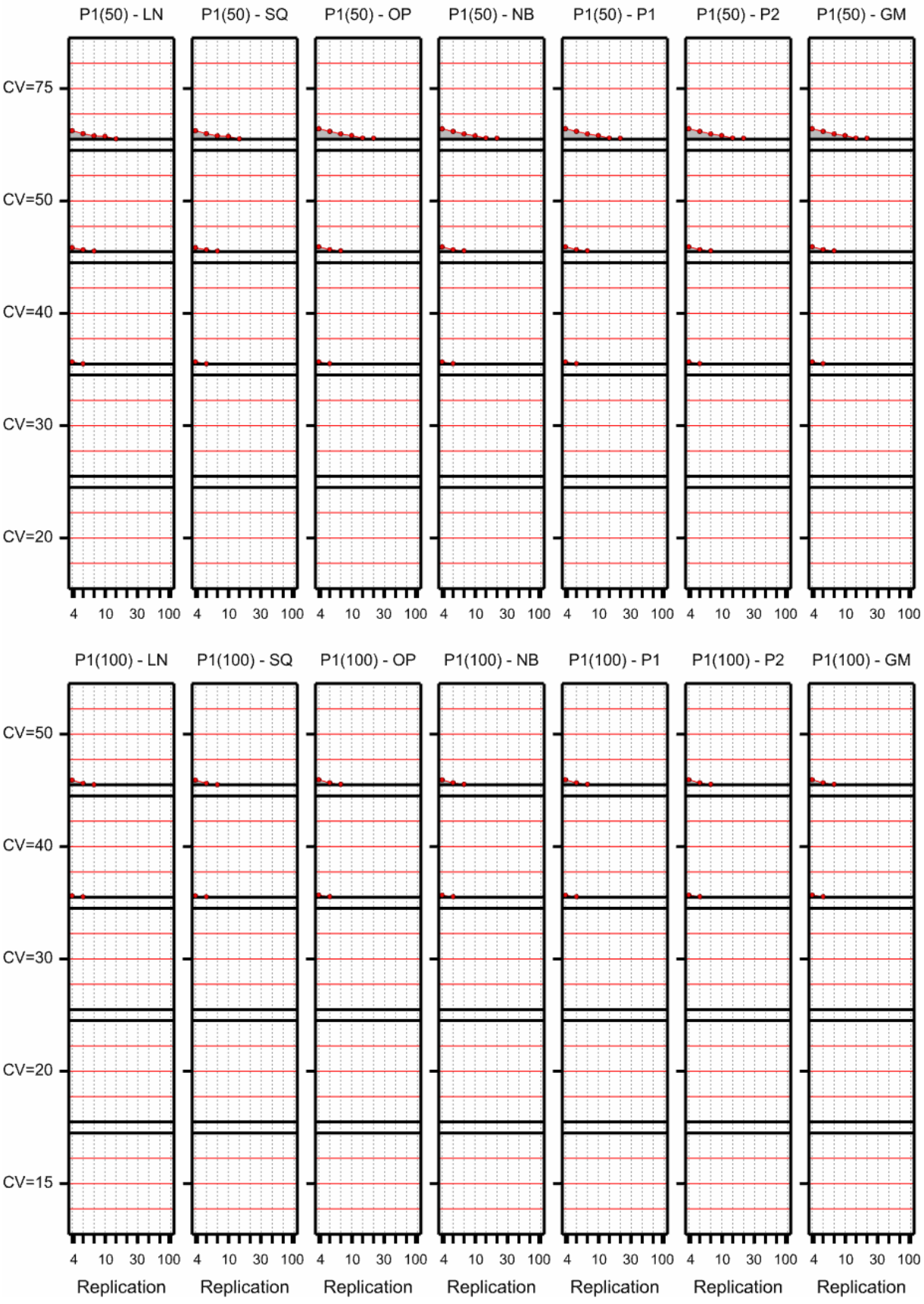
Appendix 2 H14: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.25



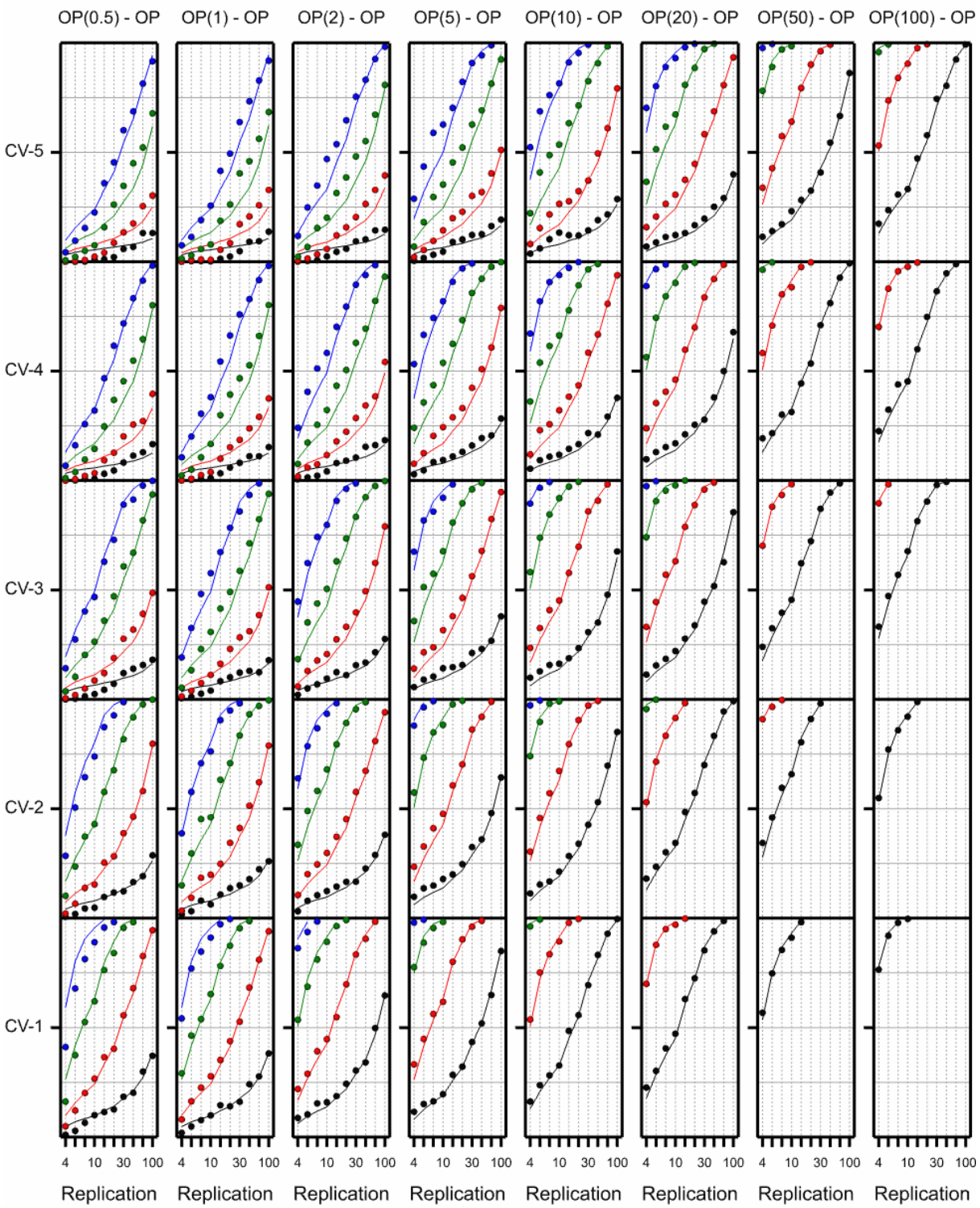
Appendix 2 H15: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.25



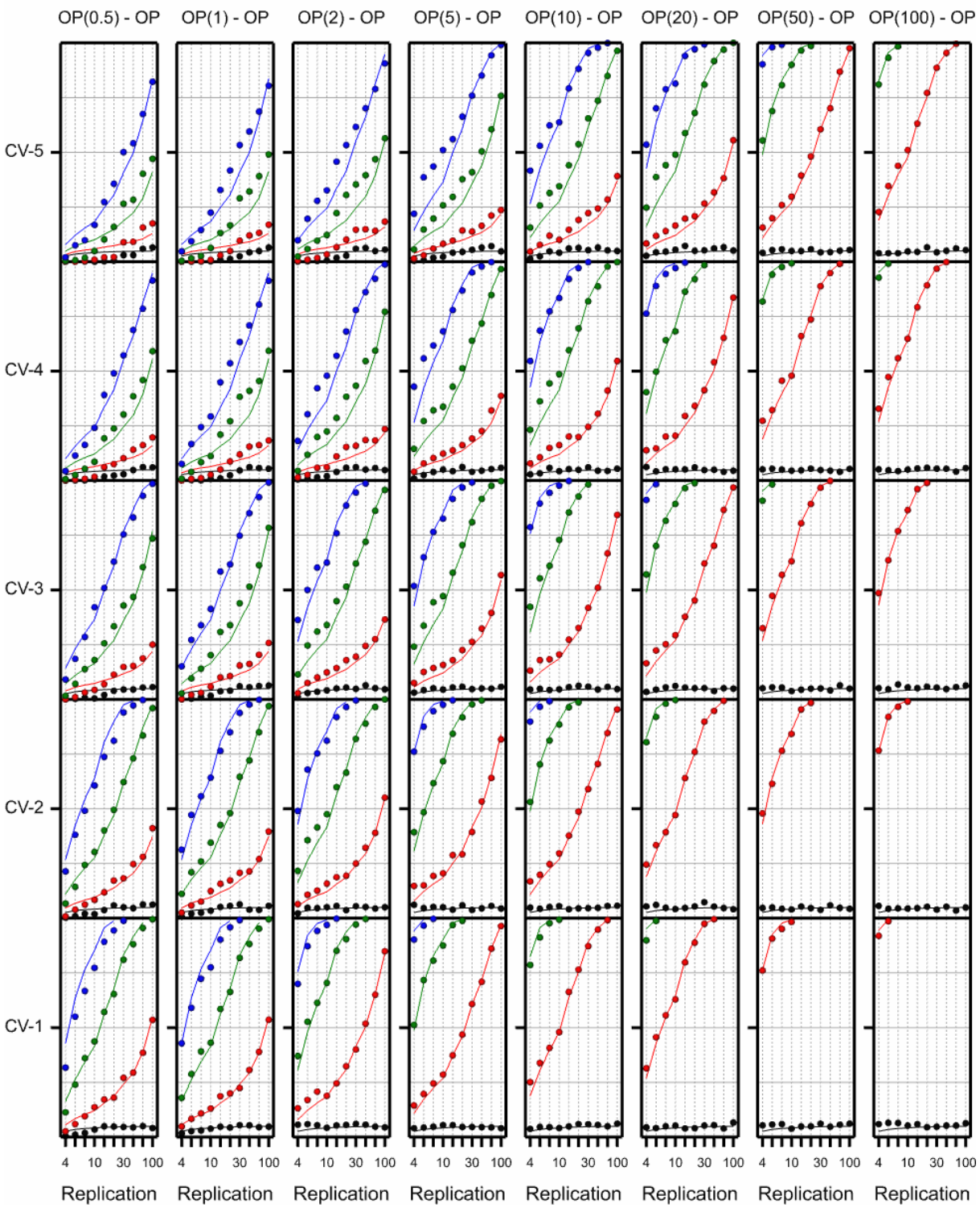
Appendix 2 H16: Power of equivalence test for Power(1.5); LOC=0.5; Q = 0.25



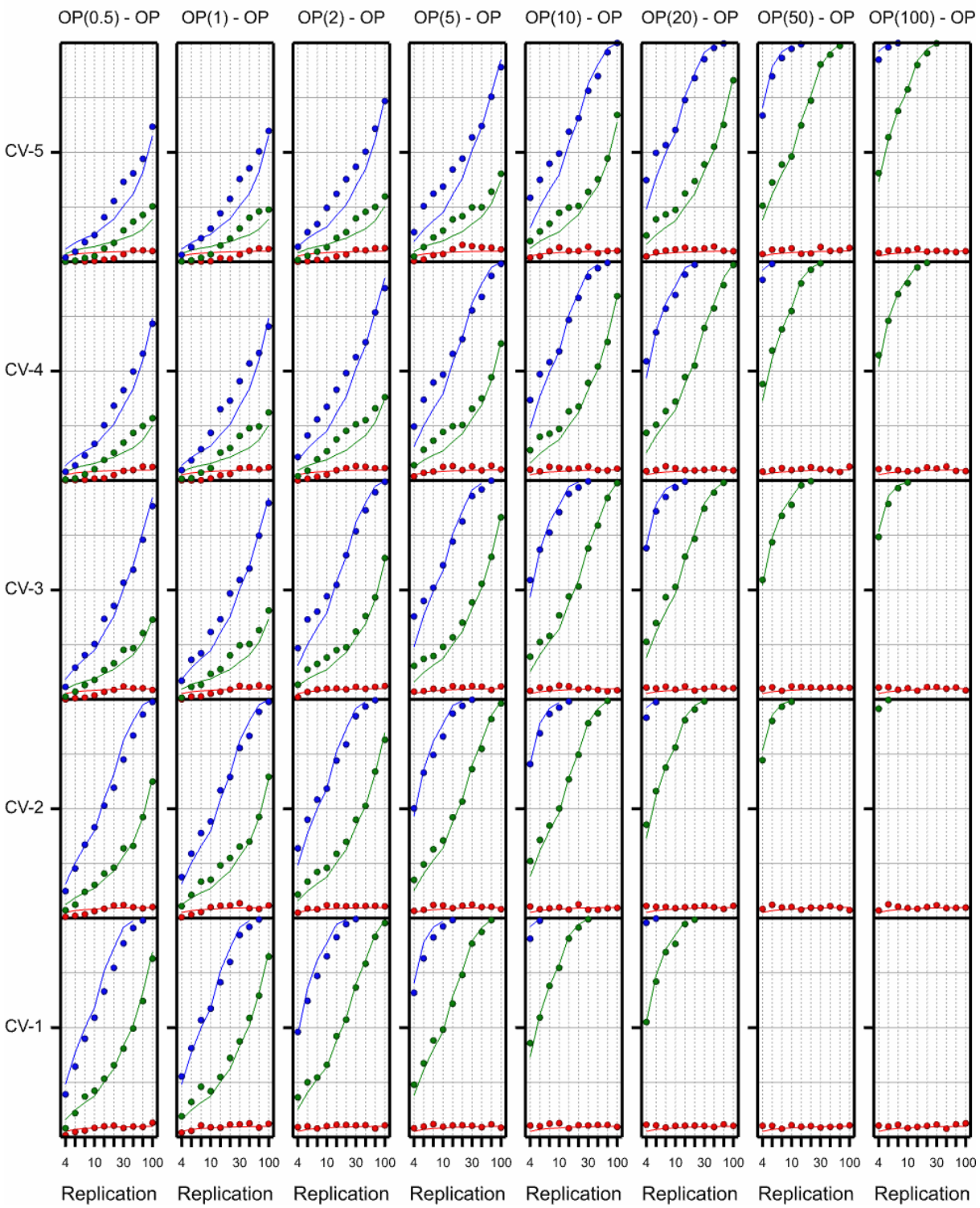
Appendix 2 I1: Power of OP & Lyles equivalence test for Overdispersed Poisson; Q=1



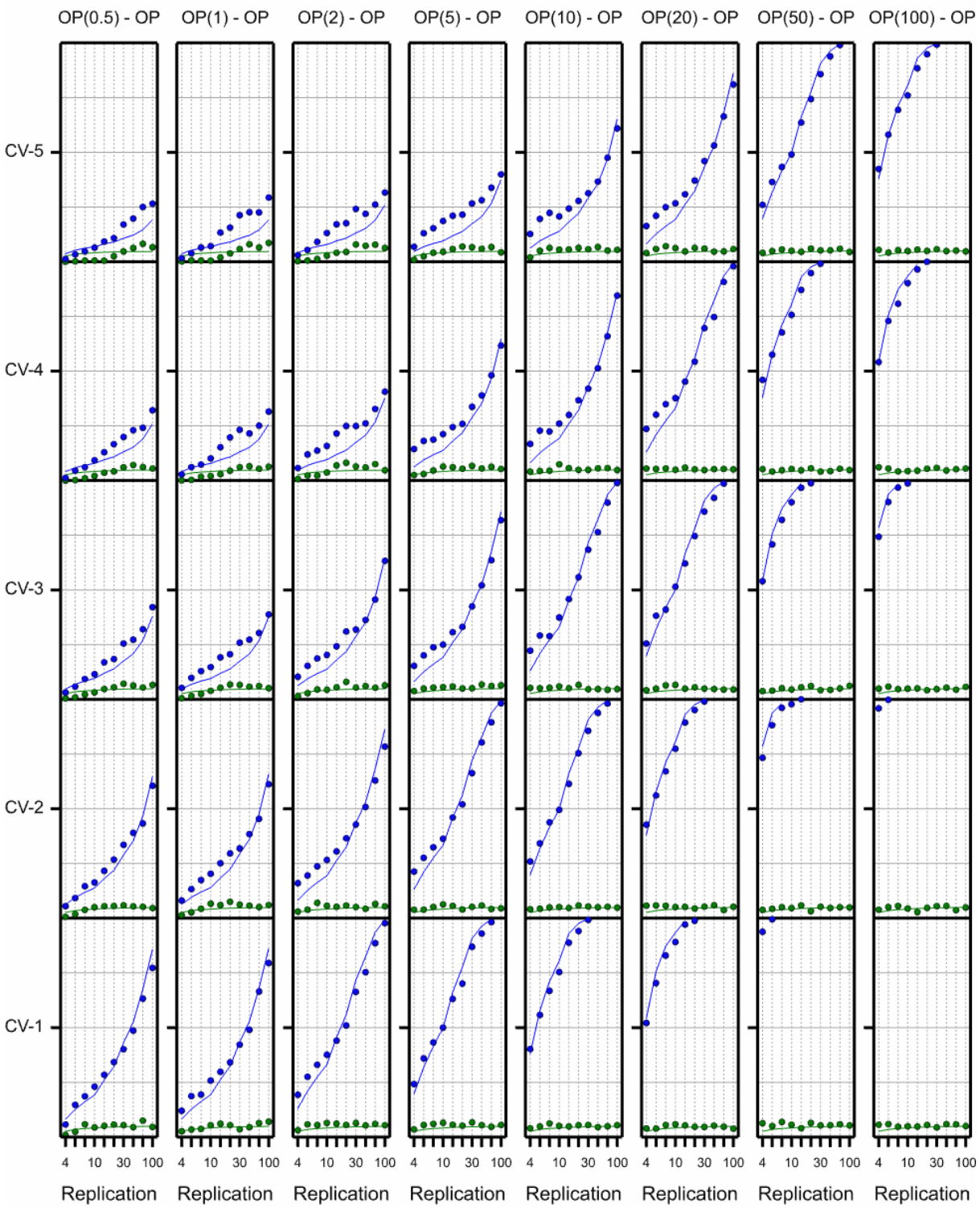
Appendix 2 I2: Power of OP & Lyles equivalence test for Overdispersed Poisson; Q=0.75



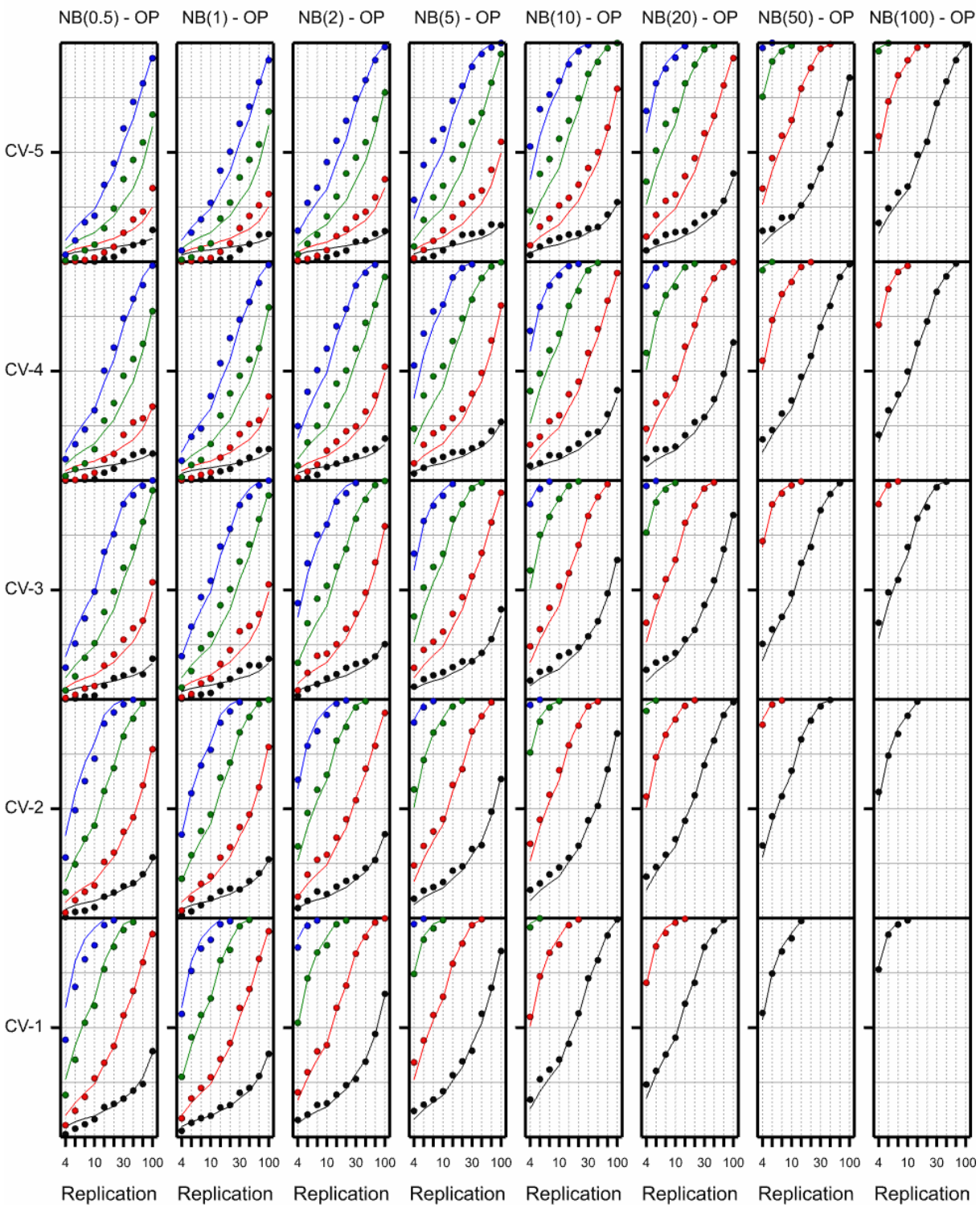
Appendix 2 I3: Power of OP & Lyles equivalence test for Overdispersed Poisson; Q=0.5



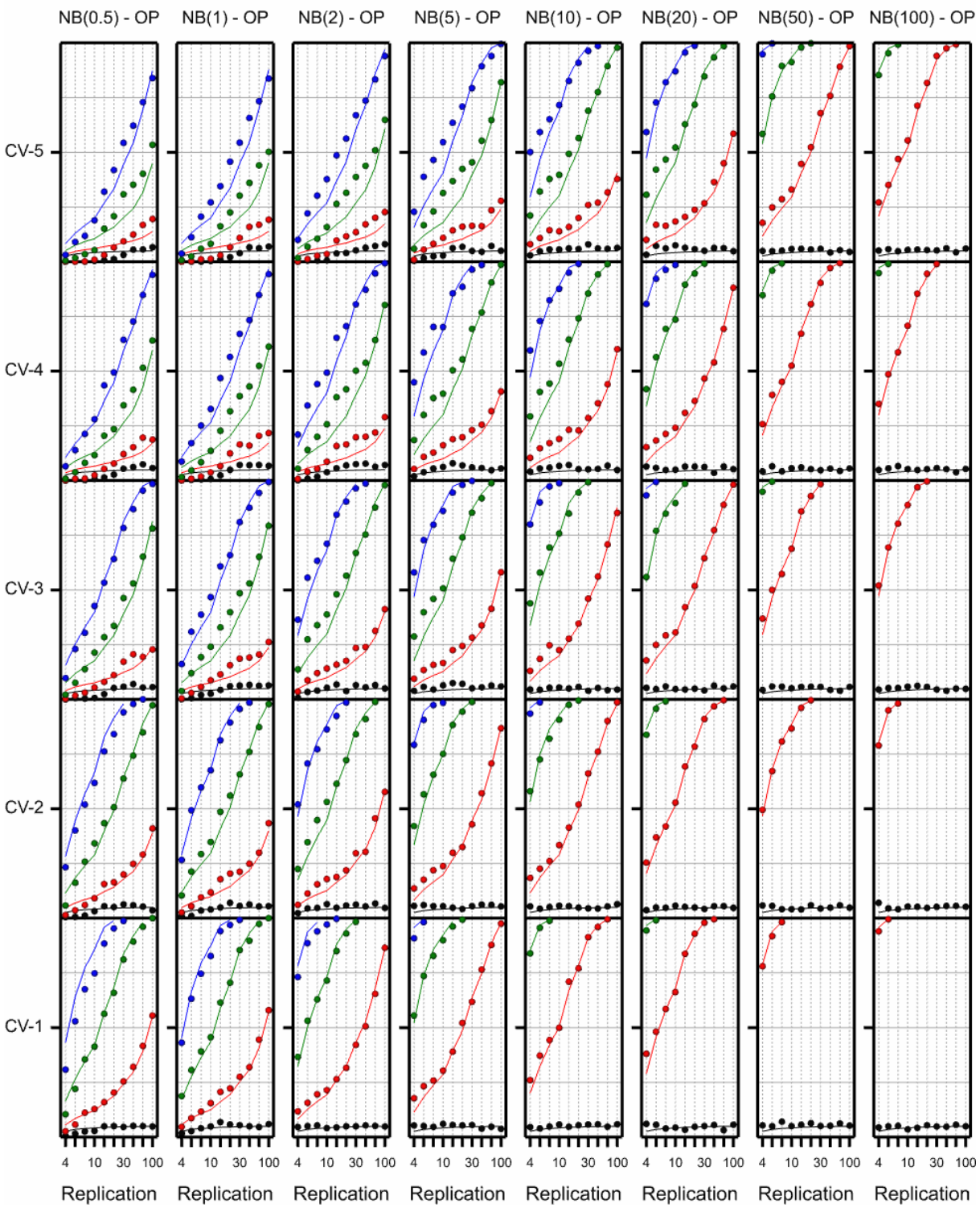
Appendix 2 I4: Power of OP & Lyles equivalence test for Overdispersed Poisson; Q=0.25



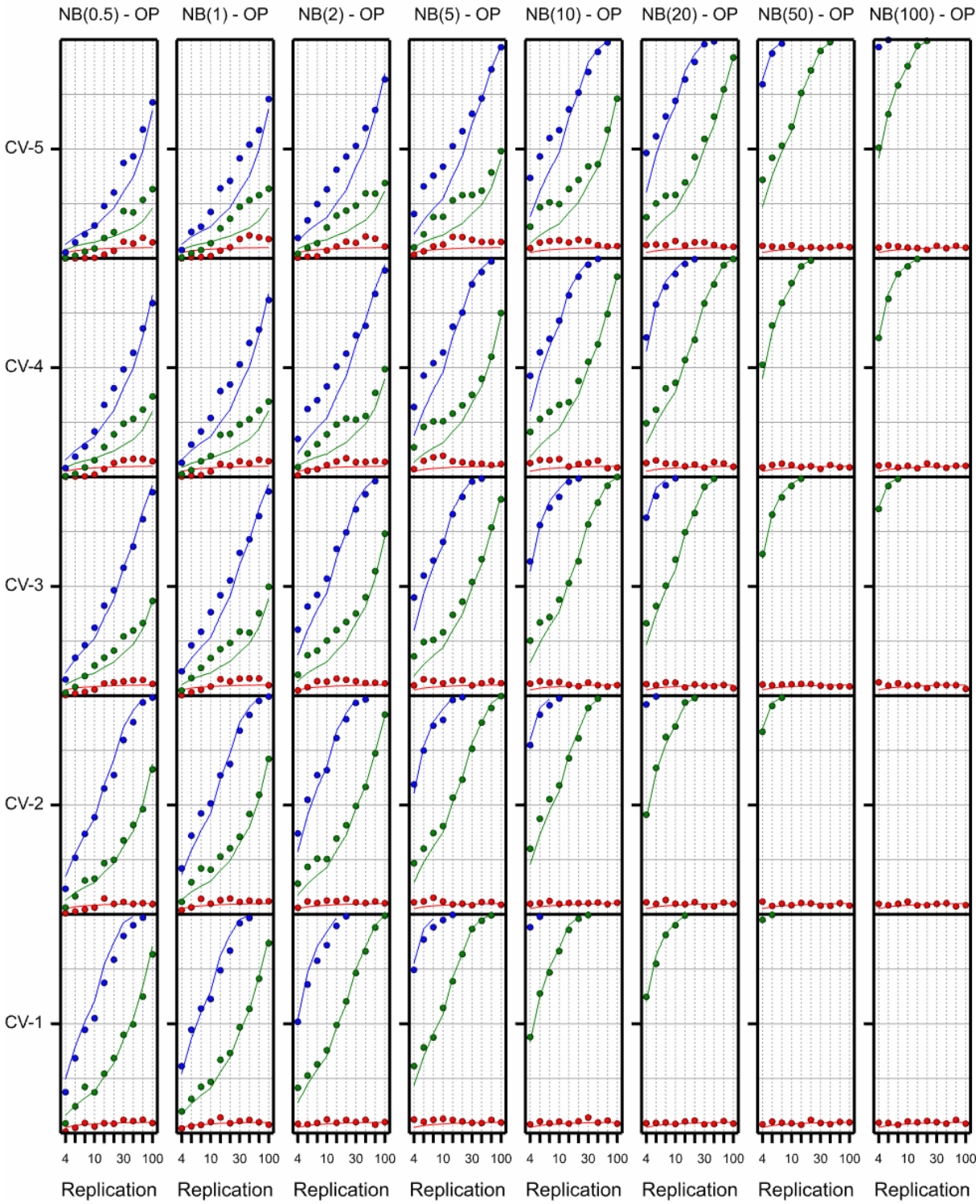
Appendix 2 J1: Power of OP & Lyles equivalence test for Negative Binomial; Q=1



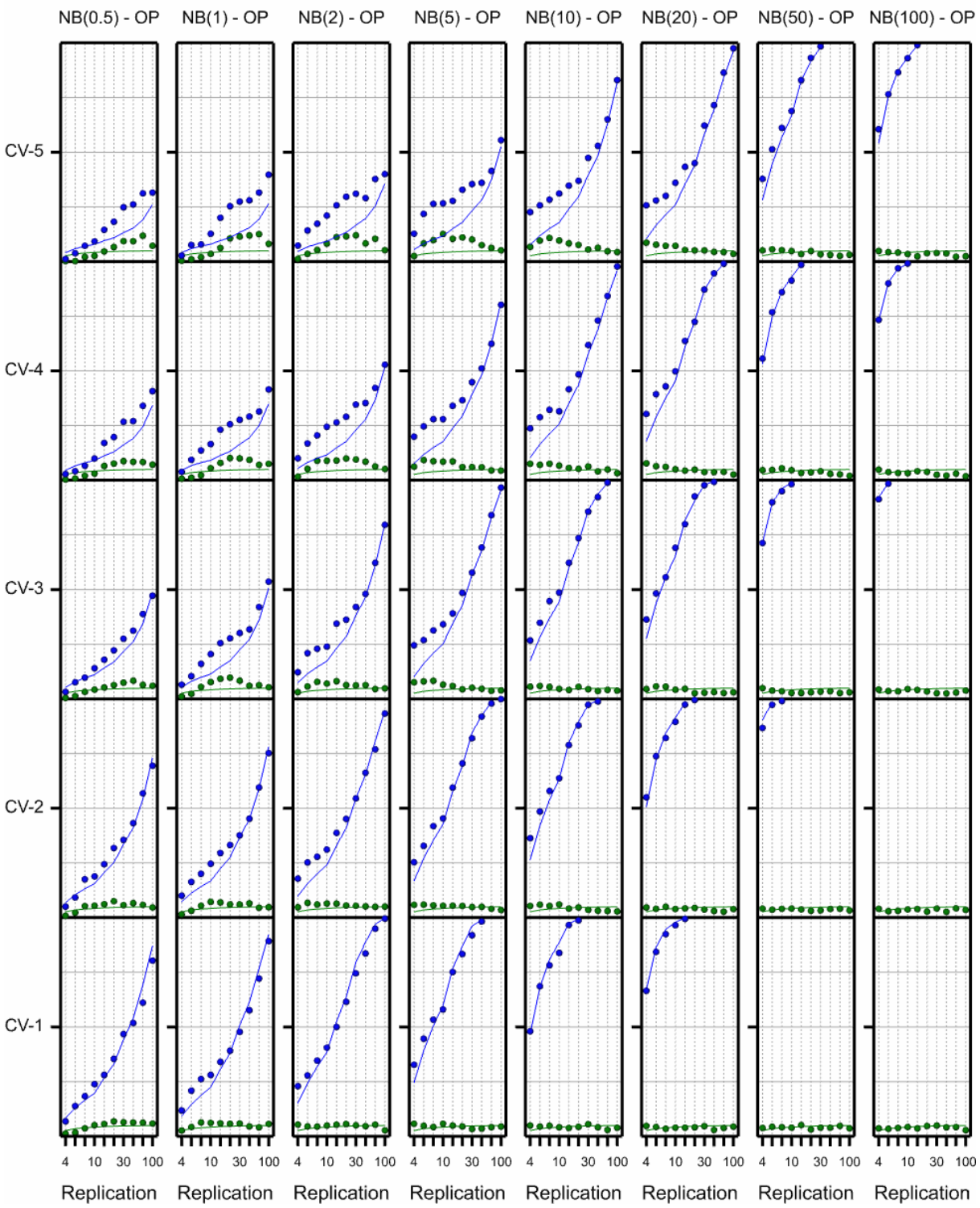
Appendix 2 J2: Power of OP & Lyles equivalence test for Negative Binomial; Q=0.75



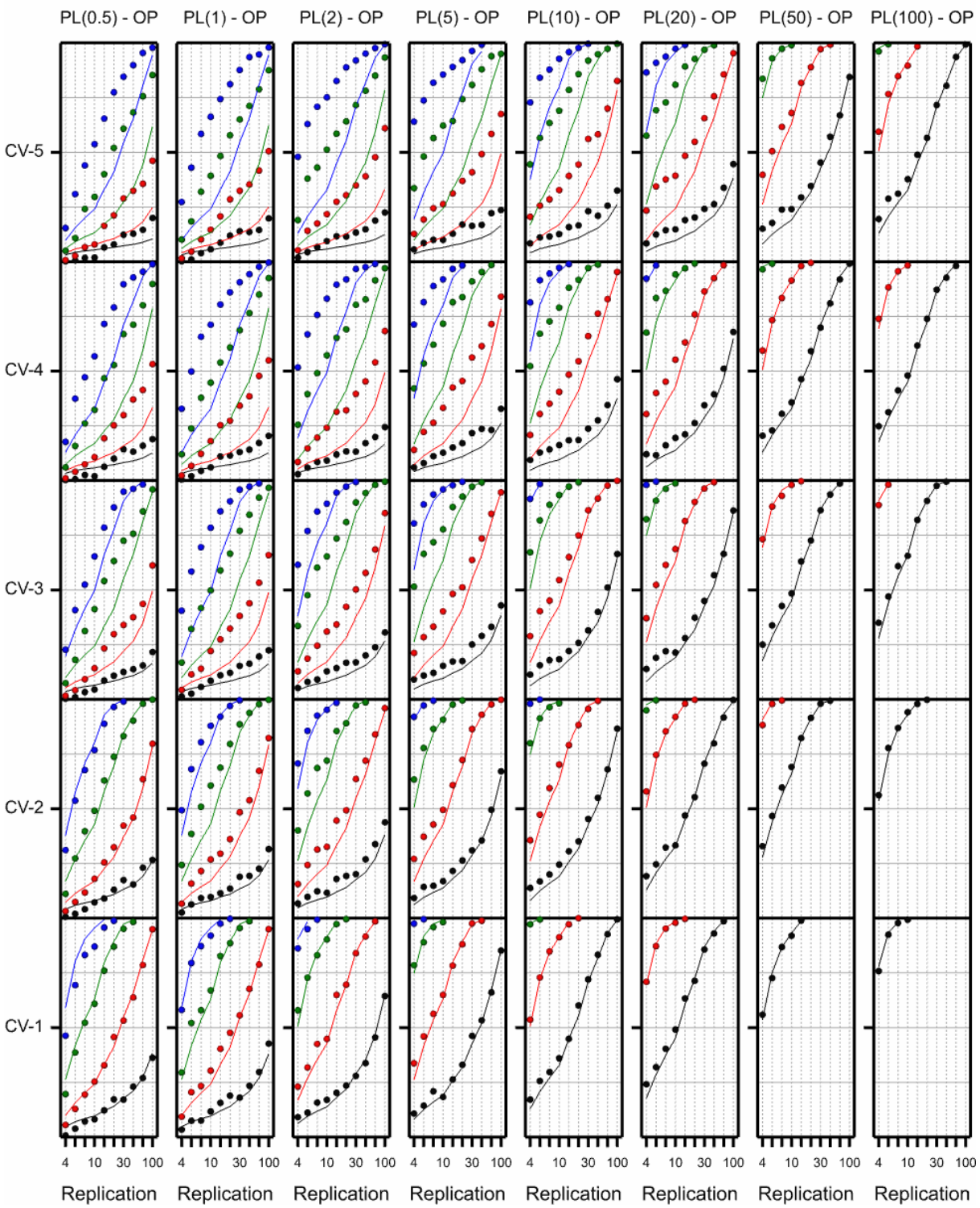
Appendix 2 J3: Power of OP & Lyles equivalence test for Negative Binomial; Q=0.5



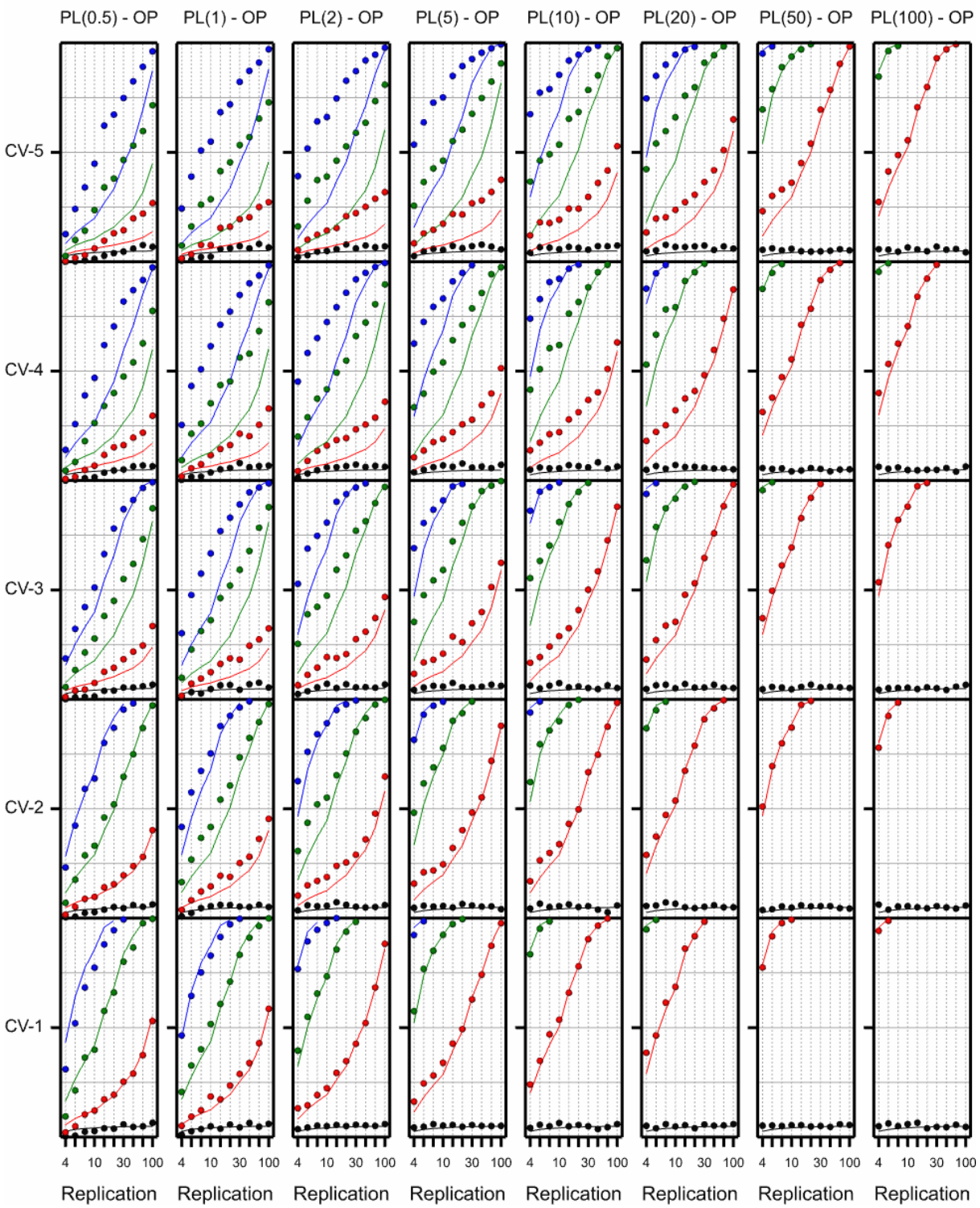
Appendix 2 J4: Power of OP & Lyles equivalence test for Negative Binomial; Q=0.25



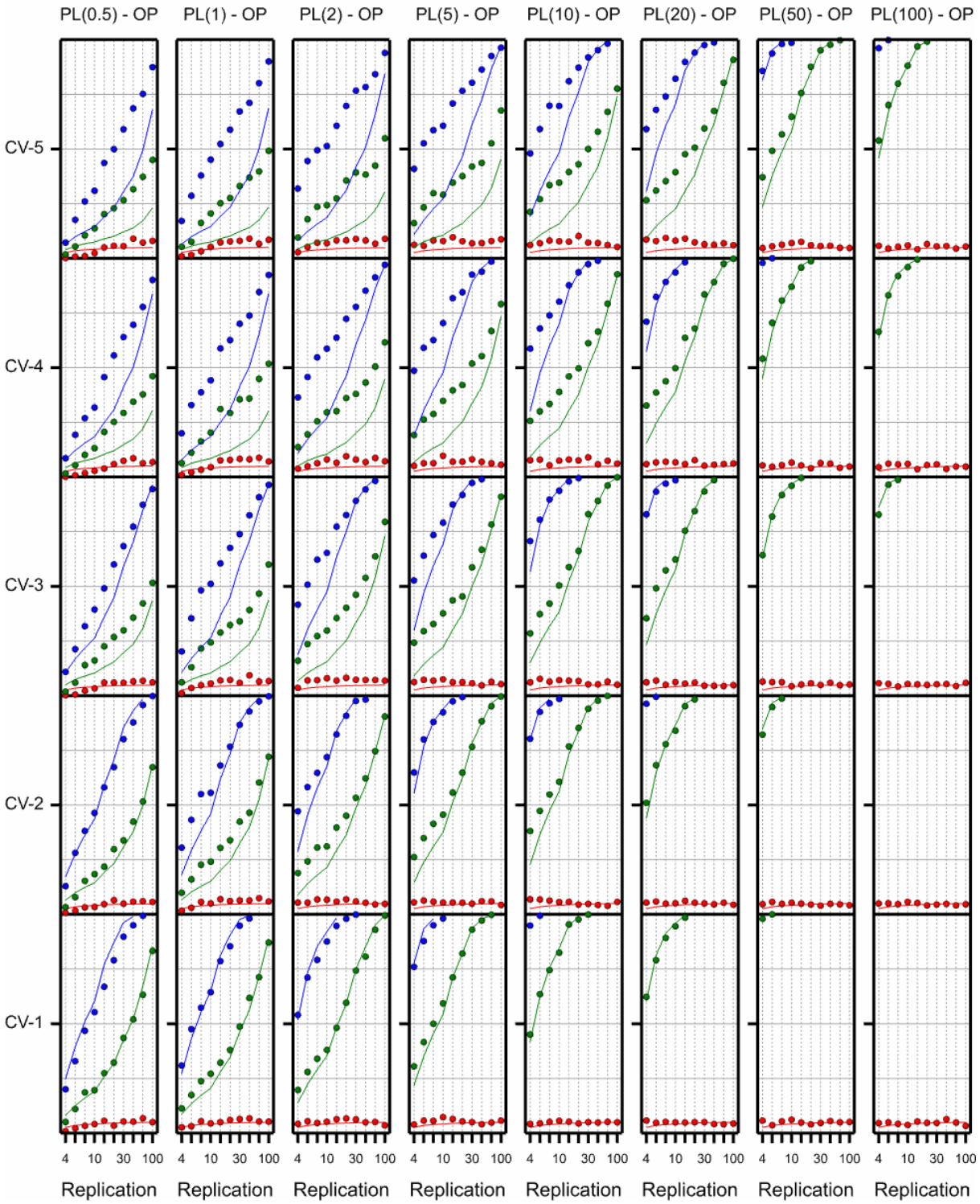
Appendix 2 K1: Power of OP & Lyles equivalence test for Poisson-LogNormal; Q=1



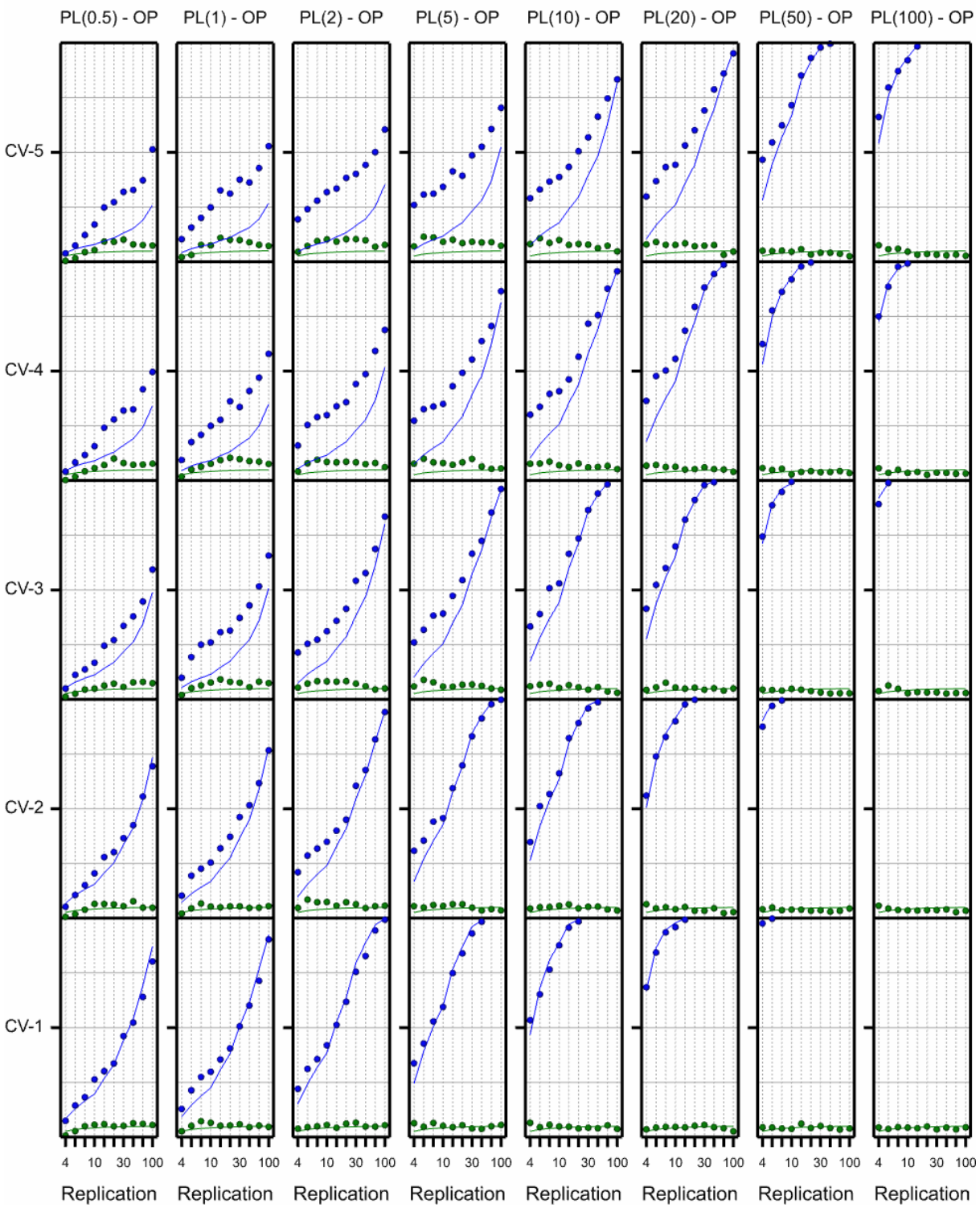
Appendix 2 K2: Power of OP & Lyles equivalence test for Poisson-LogNormal; Q=0.75



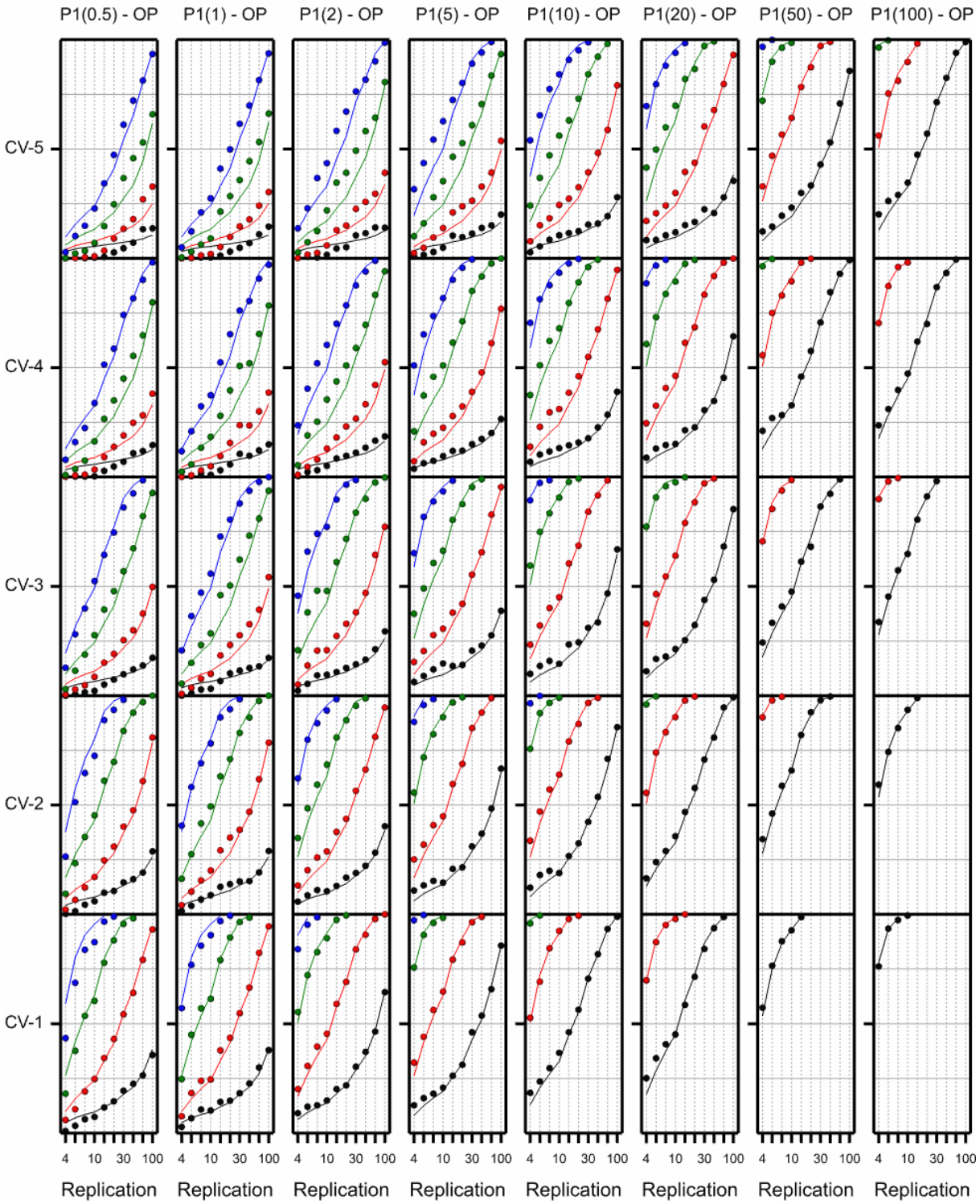
Appendix 2 K3: Power of OP & Lyles equivalence test for Poisson-LogNormal; Q=0.5



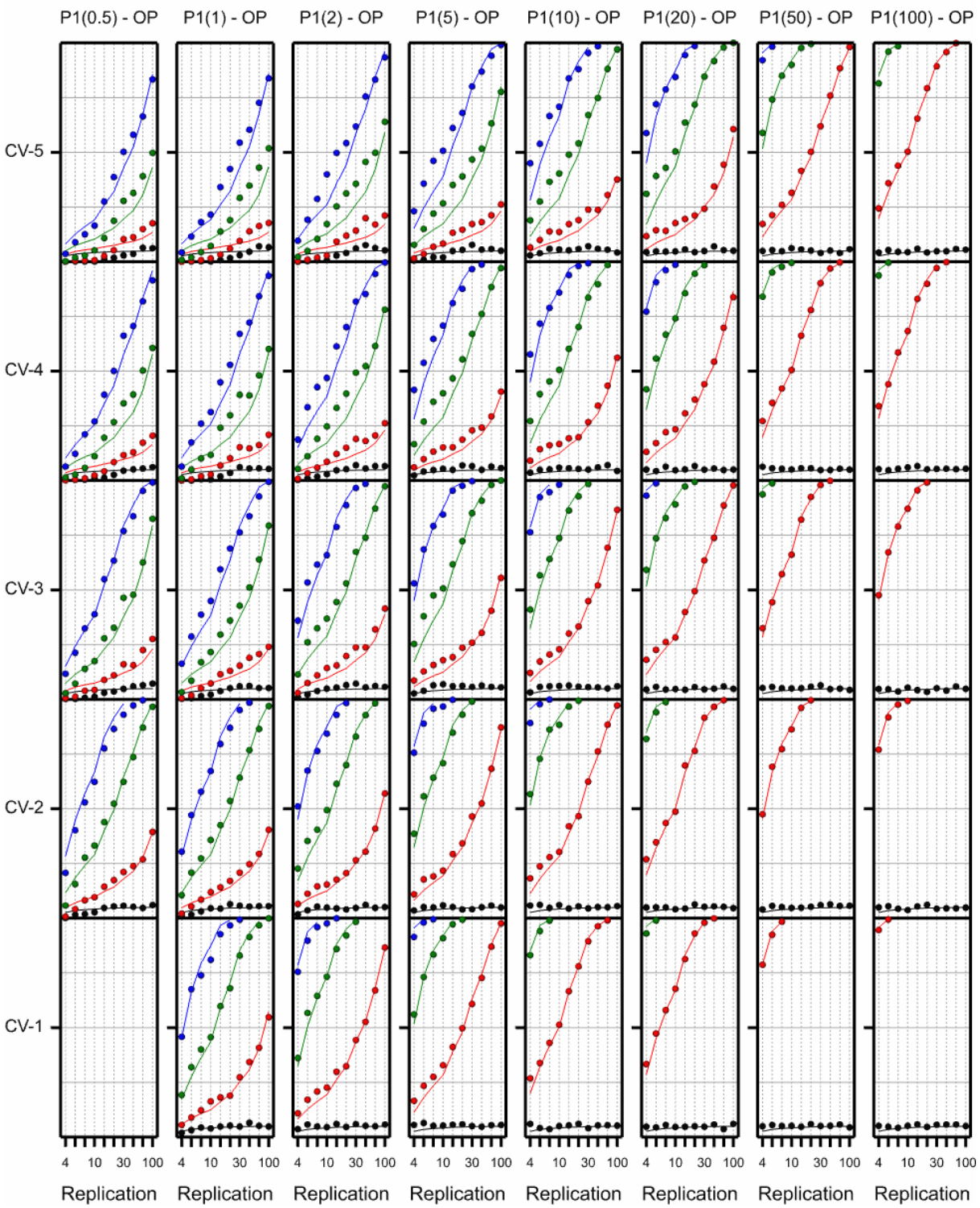
Appendix 2 K4: Power of OP & Lyles equivalence test for Poisson-LogNormal; Q=0.25



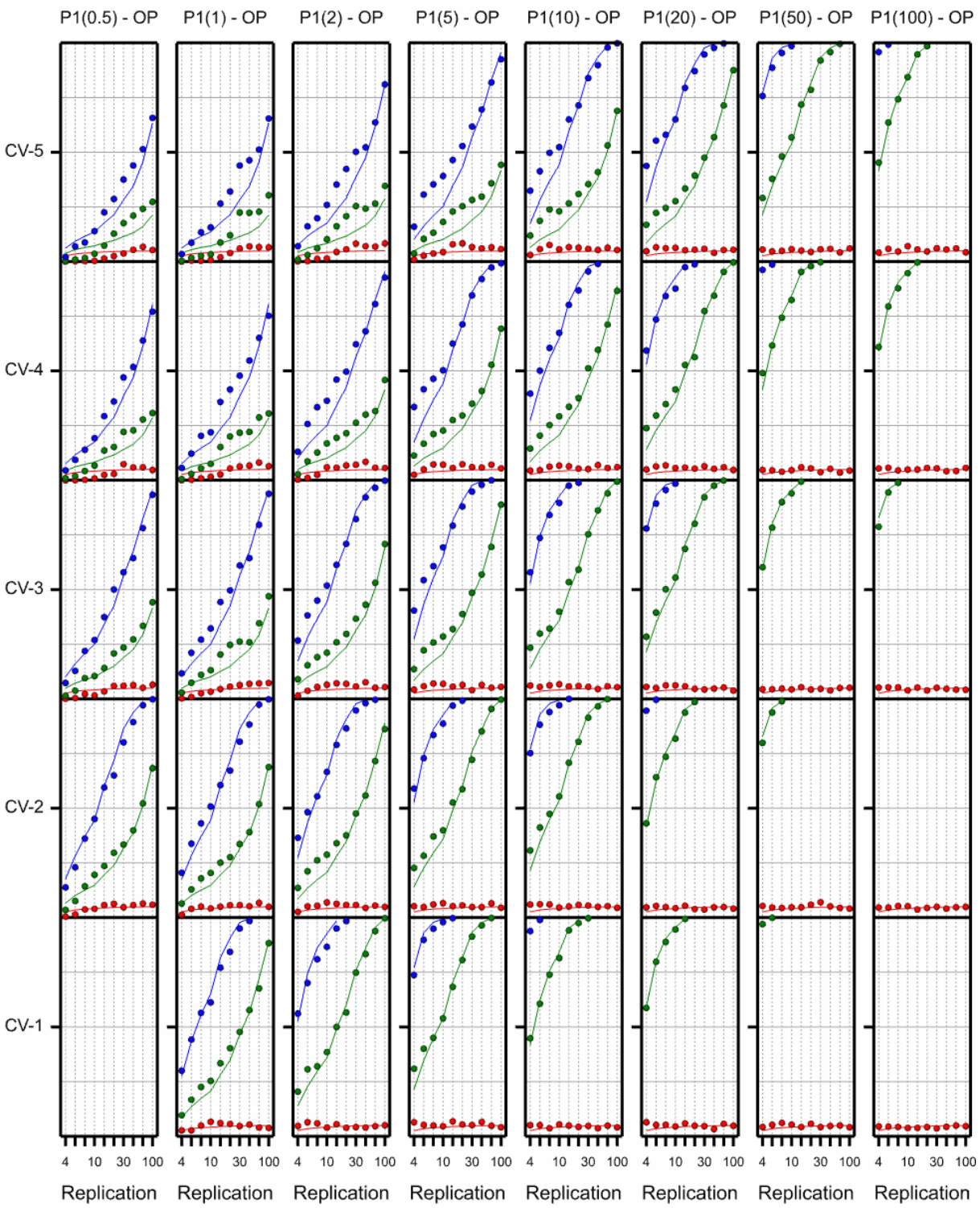
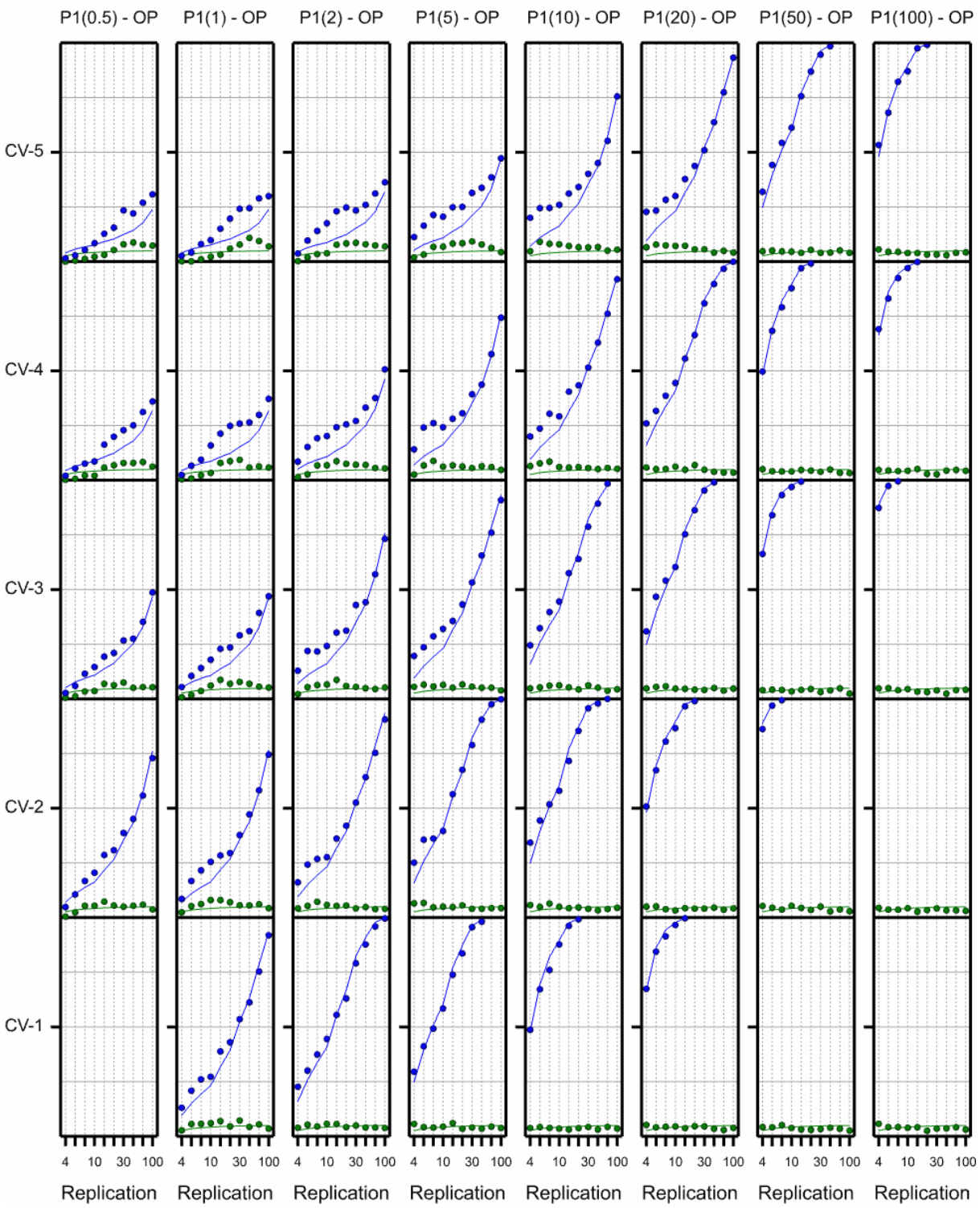
Appendix 2 L1: Power of OP & Lyles equivalence test for Power(1.5); Q=1



Appendix 2 L2: Power of OP & Lyles equivalence test for Power(1.5); Q=0.75



Appendix 2 L3: Power of OP & Lyles equivalence test for Power(1.5); Q=0.5



Appendix 2 L4: Power of OP & Lyles equivalence test for Power(1.5); Q=0.25