**S10 Table. Pool partitions corresponding to the points of Fig 3D, resulting by penalizing the false negative rate.** Here, under **se=0.99, sp=0.99**,we **vary λ1** while we fix λ2=0 and, for each resulting partition, we compute the average number of tests and false negative/positive rate. We set the number of contacts to N = 100 and sample the number of positive infections from a truncated negative binomial distribution with reproductive number R = 2.5 and dispersion parameter k = 0.1. In each experiment, we estimate averages using 10,000 samples. Double entries in the first column correspond to cases where the set of contacts is partitioned into a combination of poolsof two different sizes.

|  |  |  |  |
| --- | --- | --- | --- |
| Pool partitions(# of pools x size) | Average # of tests | False Negative Rate | False Positive Rate |
| 4 x 172 x 16 | 19.91 | 3.23% | 0.14% |
| 2 x 155 x 14 | 20.08 | 3.15% | 0.13% |
| 4 x 134 x 12 | 20.43 | 2.92% | 0.12% |
| 1 x 128 x 11 | 20.82 | 2.86% | 0.12% |
| 10 x 10 | 21.32 | 2.77% | 0.10% |
| 1 x 1010 x 9 | 21.77 | 2.85% | 0.10% |
| 4 x 98 x 8 | 22.37 | 2.81% | 0.10% |
| 9 x 84 x 7 | 23.01 | 2.64% | 0.09% |
| 2 x 812 x 7 | 23.66 | 2.69% | 0.09% |
| 10 x 75 x 6 | 24.36 | 2.56% | 0.09% |
| 4 x 712 x 6 | 25.04 | 2.60% | 0.09% |
| 15 x 62 x 5 | 25.82 | 2.38% | 0.08% |
| 20 x 5 | 28.13 | 2.21% | 0.07% |
| 25 x 4 | 32.21 | 1.94% | 0.06% |
| 1 x 432 x 3 | 39.21 | 1.70% | 0.05% |
| 32 x 32 x 2 | 40.11 | 1.69% | 0.05% |
| 50 x 2 | 54.89 | 1.30% | 0.03% |
| 100 x 1 | 100.00 | 0.30% | 1.00% |