|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| group | description | # of datasets | # of species | num of strains | Coverage | similarity rate | sequence error | mutation rate | proportion |
| group1 | Default parameter for three species | 3 | 3 | 2 | 200x | None | 0.10% | 0.01% | 30/70 |
| group2 | Mutation rate is from 0.02% to 0.05% | 12 | 3 | 2 | 200x | None | 0.10% | 0.02%, 0.03%, 0.04%, 0.05% | 30/70 |
| group3 | Proportions 10/90, 20/80, 40/60, 50/50 | 12 | 3 | 2 | 200x | None | 0.10% | 0.01% | 40/60, 50/50, 20/80, 10/90 |
| group4 | Sequence error from 0.2% to 1.5% | 42 | 3 | 2 | 200x | None | 0.2% to 1.5% | 0.01% | 30/70 |
| group5 | Coverage 200x, 300x, 400x and 500x | 12 | 3 | 2 | 200x, 300x, 400x, 500x | None | 0.10% | 0.01% | 30/70 |
| group6 | 3 strains with type 1 evolutionary relationship | 54 | 3 | 3 | 200x | t1 | 0.10% | 0.01% | 5/25/70, 10/30/60, 15/35/50 |
| group7 | 4 strains with type2 evolutionary relationship | 54 | 3 | 4 | 200x | t2 | 0.10% | 0.01% | 5/15/25/55, 5/15/35/45,10/20/30/40 |
| group8 | 4 strains with type3 evolutionary relationship | 54 | 3 | 4 | 200x | t3 | 0.10% | 0.01% | 5/15/25/55, 5/15/35/45,10/20/30/40 |

Simulation Command:

group1: dwgsim -e 0.00050 -E 0.00050 -d 400 -s 50 -N -1 -C 140.0 -1 100 -2 100 -r 0 -z 1534513916 -n 0 -X 0 -R 0 -c 0 -S 0 -y 0 genome\_NC\_009515.1\_0.01\_2 res\_name

group2: dwgsim -e 0.00050 -E 0.00050 -d 400 -s 50 -N -1 -C 60.0 -1 100 -2 100 -r 0 -z 1534513916 -n 0 -X 0 -R 0 -c 0 -S 0 -y 0 genome\_NC\_009515.1\_0.02\_1 res\_name

group3: dwgsim -e 0.00050 -E 0.00050 -d 400 -s 50 -N -1 -C 20.0 -1 100 -2 100 -r 0 -z 1534513916 -n 0 -X 0 -R 0 -c 0 -S 0 -y 0 genome\_NC\_009515.1\_0.01\_1 res\_name

group4: dwgsim -e 0.00700 -E 0.00700 -d 400 -s 50 -N -1 -C 60.0 -1 100 -2 100 -r 0 -z 1534513916 -n 0 -X 0 -R 0 -c 0 -S 0 -y 0 genome\_NC\_020995.1\_0.01\_1 res\_name

group5: dwgsim -e 0.00050 -E 0.00050 -d 400 -s 50 -N -1 -C 30.0 -1 100 -2 100 -r 0 -z 1534513916 -n 0 -X 0 -R 0 -c 0 -S 0 -y 0 genome\_NC\_009515.1\_0.01\_1 res\_name

group6: dwgsim -e 0.00050 -E 0.00050 -d 400 -s 50 -N -1 -C 70.0 -1 100 -2 100 -r 0 -z 1534513916 -n 0 -X 0 -R 0 -c 0 -S 0 -y 0 genome\_NC\_020995.1\_0.01\_2\_0.3\_t1 res\_name

group7: "dwgsim -e 0.00050 -E 0.00050 -d 400 -s 50 -N -1 -C 40.0 -1 100 -2 100 -r 0 -z 1534513916 -n 0 -X 0 -R 0 -c 0 -S 0 -y 0 genome\_NC\_020995.1\_0.01\_3\_0.2\_t2 res\_name

group8: dwgsim -e 0.00050 -E 0.00050 -d 400 -s 50 -N -1 -C 60.0 -1 100 -2 100 -r 0 -z 1534513916 -n 0 -X 0 -R 0 -c 0 -S 0 -y 0 genome\_NC\_020995.1\_0.01\_3\_0.6\_t3 res\_name