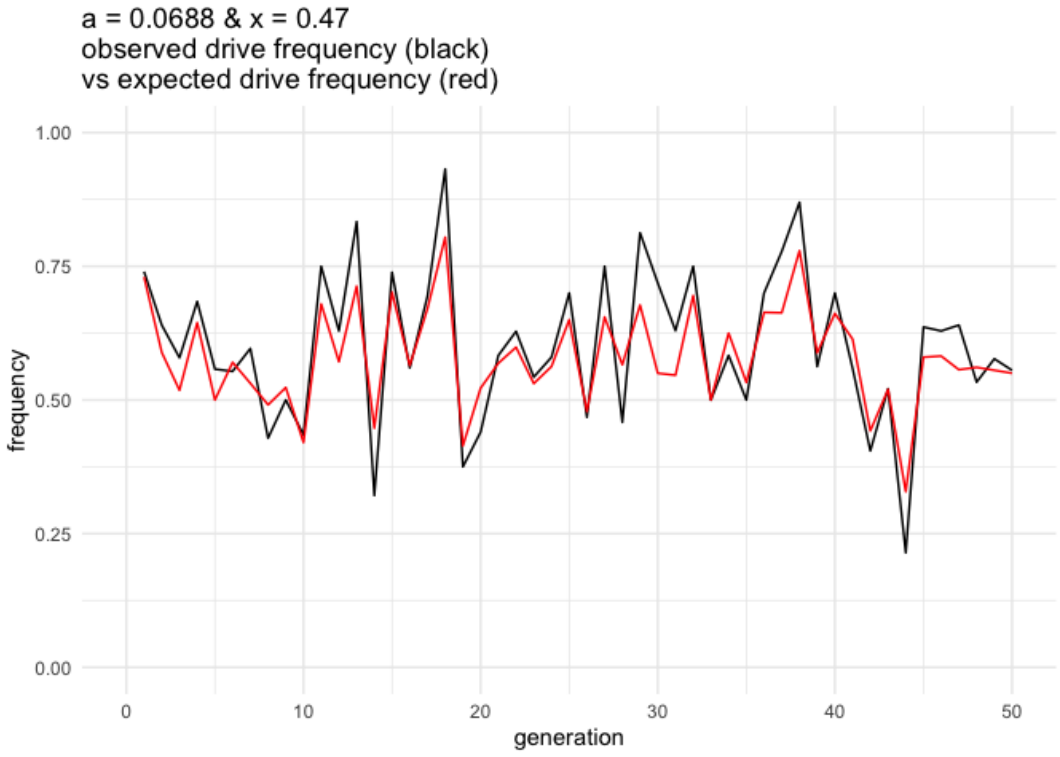
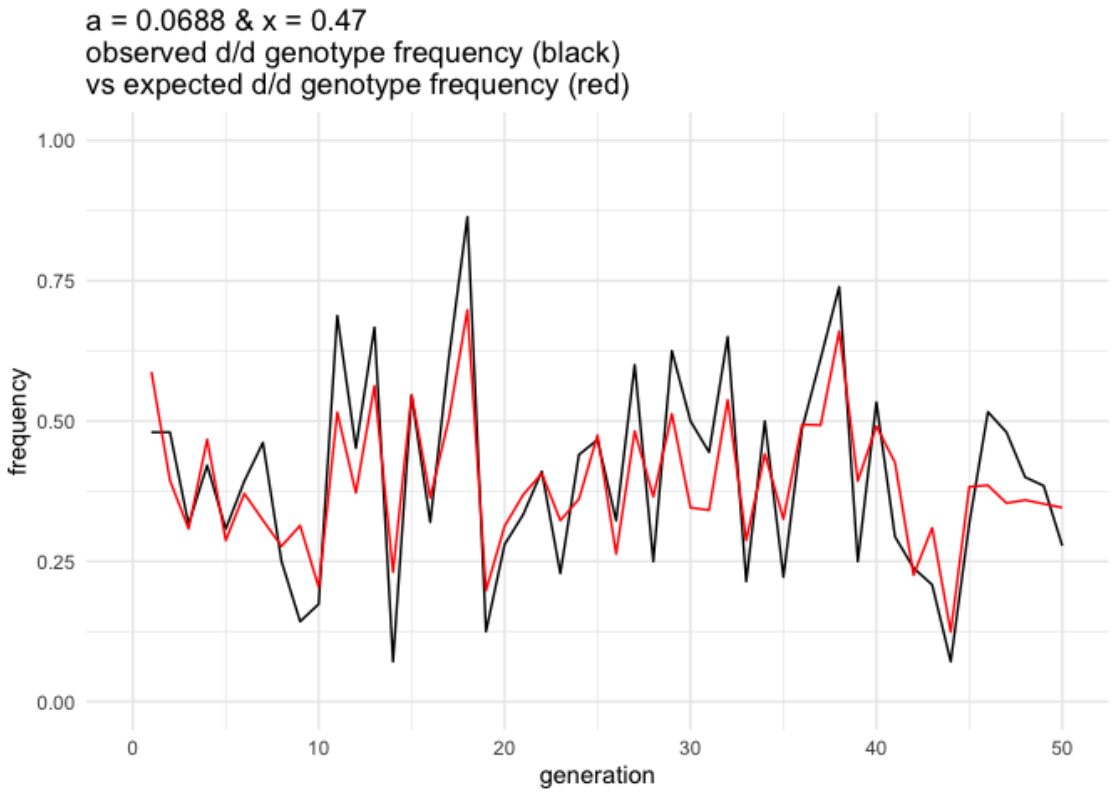
- w_{AA} = the probability that a drive homozygous embryo survives to adulthood
- w_{Aa} = the probability that a drive heterozygous embryo survives to adulthood
- w_{aa} = the probability that a wild-type embryo survives to adulthood
- $\overline{w(t)} = u^2(t)w_{AA} + 2u(t)(1-u(t))w_{Aa} + (1-u(t))^2 w_{aa}$
- $E\left[u(t+1)\right] = \frac{u^2(t)w_{AA} + u(t)(1-u(t))w_{Aa}}{\overline{w(t)}}$
- $E\left[u_{AA}(t+1)\right] = \frac{w_{AA}}{\overline{w(t)}} u^2(t)$
- $E\left[u_{Aa}(t+1)\right] = \frac{w_{Aa}}{\overline{w(t)}} 2u(t)(1-u(t))$
- $E\left[u_{aa}(t+1)\right] = \frac{w_{aa}}{\overline{w(t)}} (1-u(t))^2$
    - In SLiM, the drive frequency *before* viability selection is applied is the drive frequency during an early() event, after all embryos are created but before fitness() is applied.

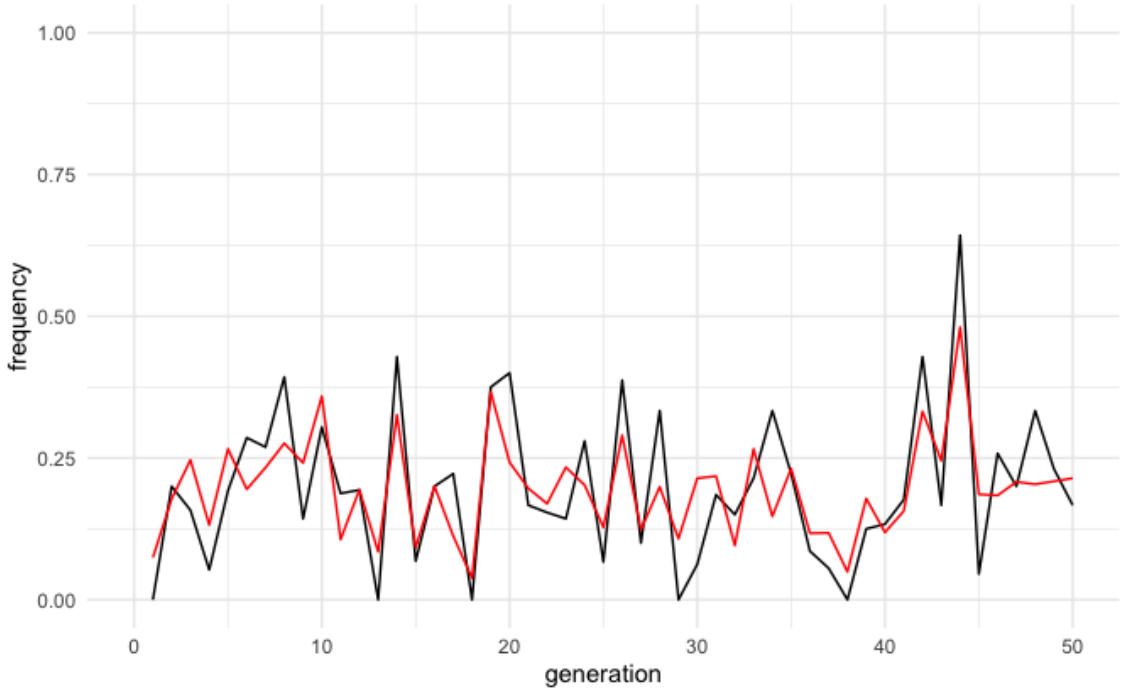
x < -a/2:


a = 0.0688 & x = 0.47
observed drive frequency (black)
vs expected drive frequency (red)
1.00
0.75
0.50
0.25
0.00
frequency
0
10
20
30
40
50
generation

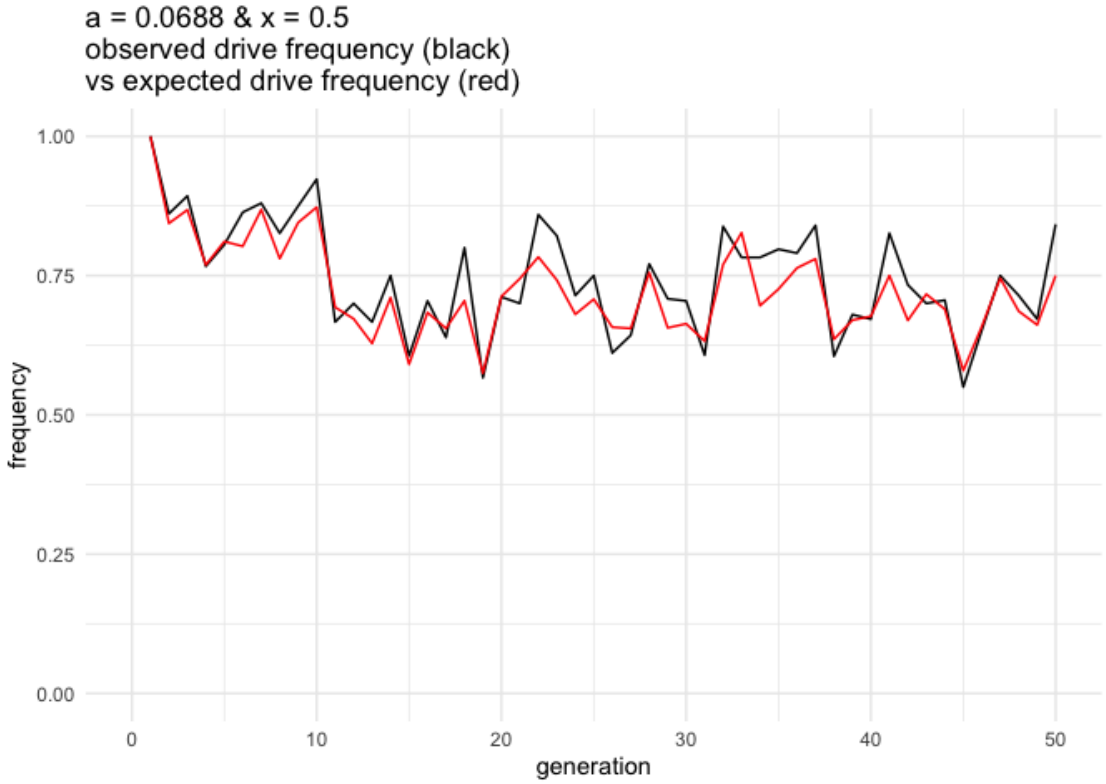

a = 0.0688 & x = 0.47
observed d/d genotype frequency (black)
vs expected d/d genotype frequency (red)
1.00
0.75
0.50
0.25
0.00
frequency
0
10
20
30
40
50
generation

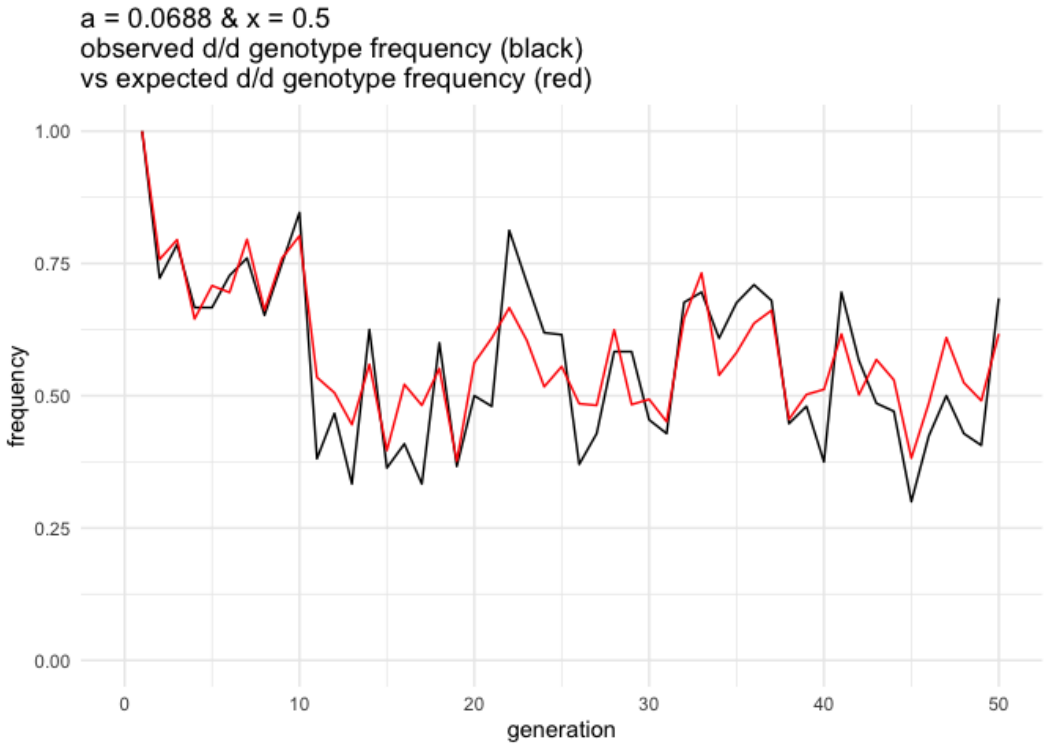
a = 0.0688 & x = 0.47
observed d/wt genotype frequency (black)
vs expected d/wt genotype frequency (red)

a = 0.0688 & x = 0.47
observed wt/wt genotype frequency (black)
vs expected wt/wt genotype frequency (red)

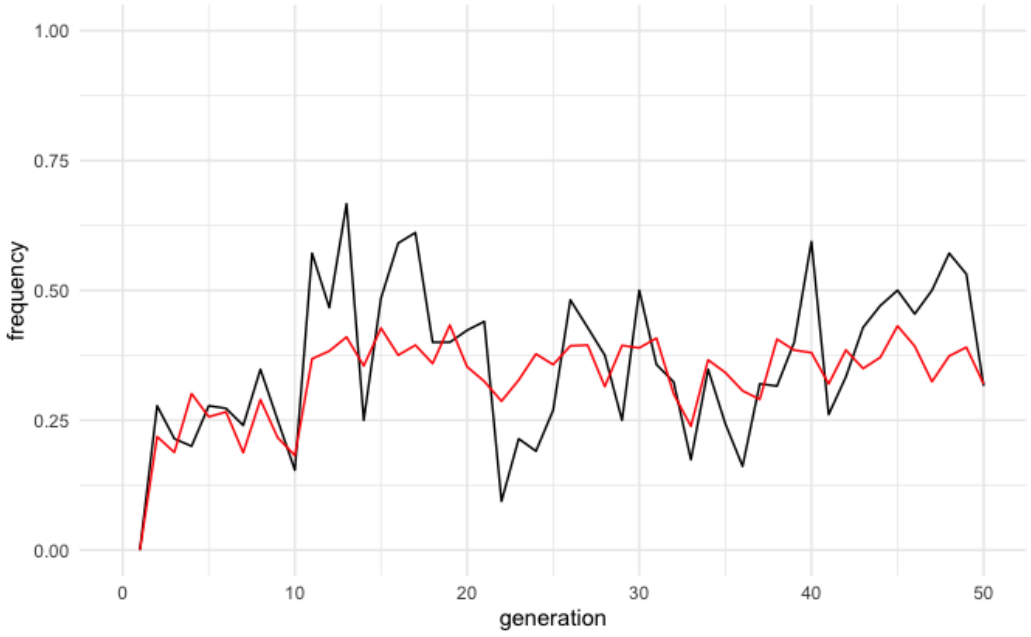


-a/2 <= x <= a/2:

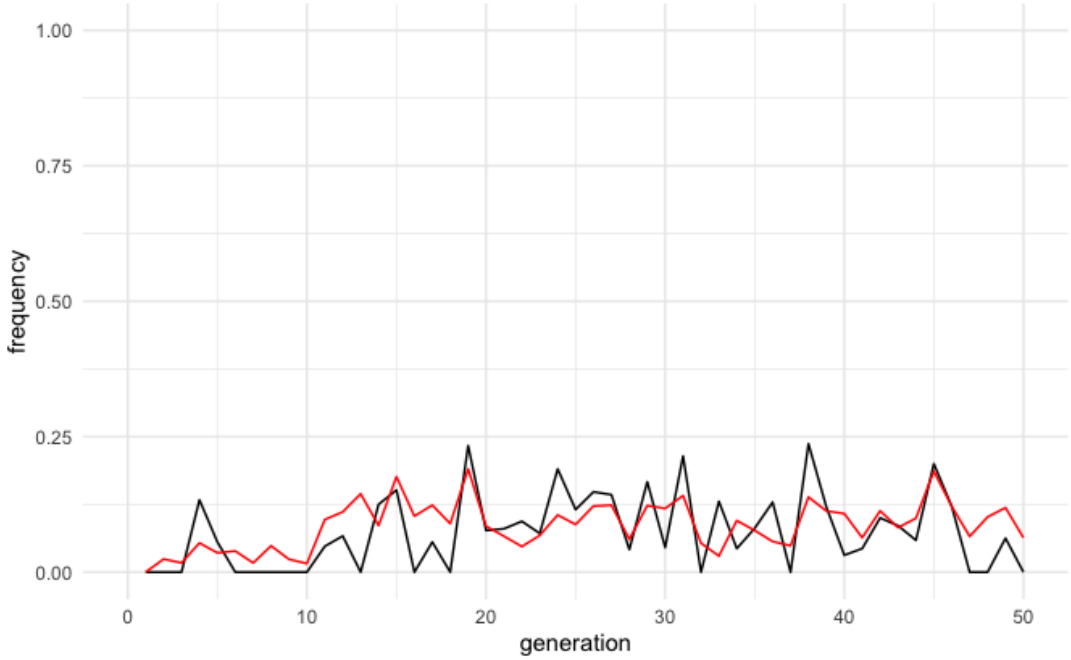

a = 0.0688 & x = 0.5
observed drive frequency (black)
vs expected drive frequency (red)
1.00
0.75
0.50
0.25
0.00
frequency
0
10
20
30
40
50
generation


a = 0.0688 & x = 0.5
observed d/d genotype frequency (black)
vs expected d/d genotype frequency (red)
1.00
0.75
0.50
0.25
0.00
frequency
0
10
20
30
40
50
generation

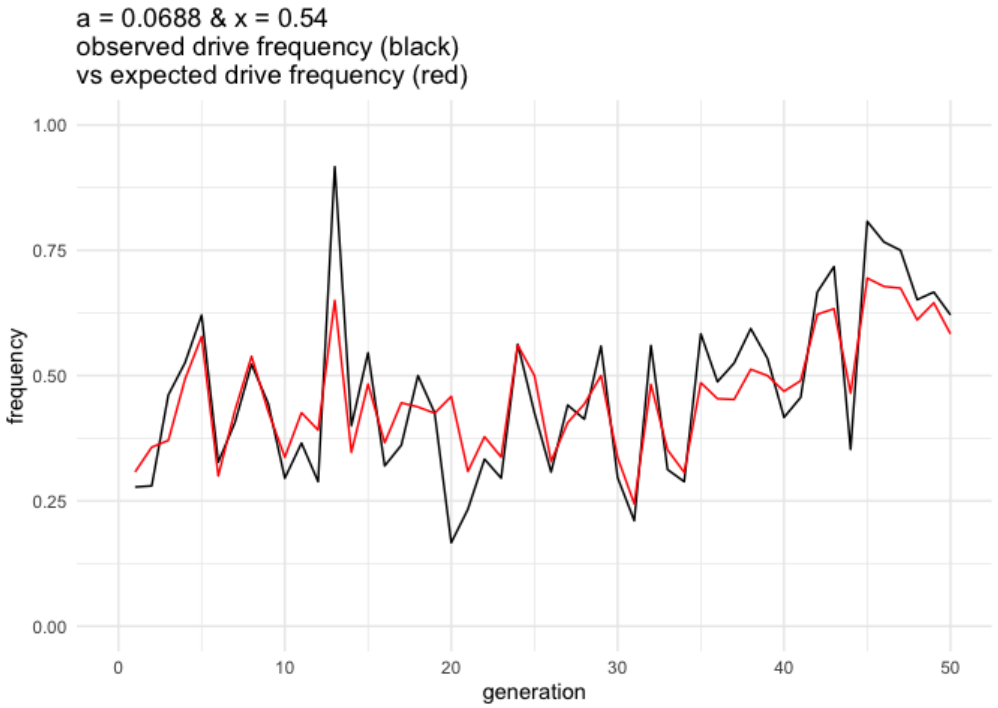
a = 0.0688 & x = 0.5
observed d/wt genotype frequency (black)
vs expected d/wt genotype frequency (red)

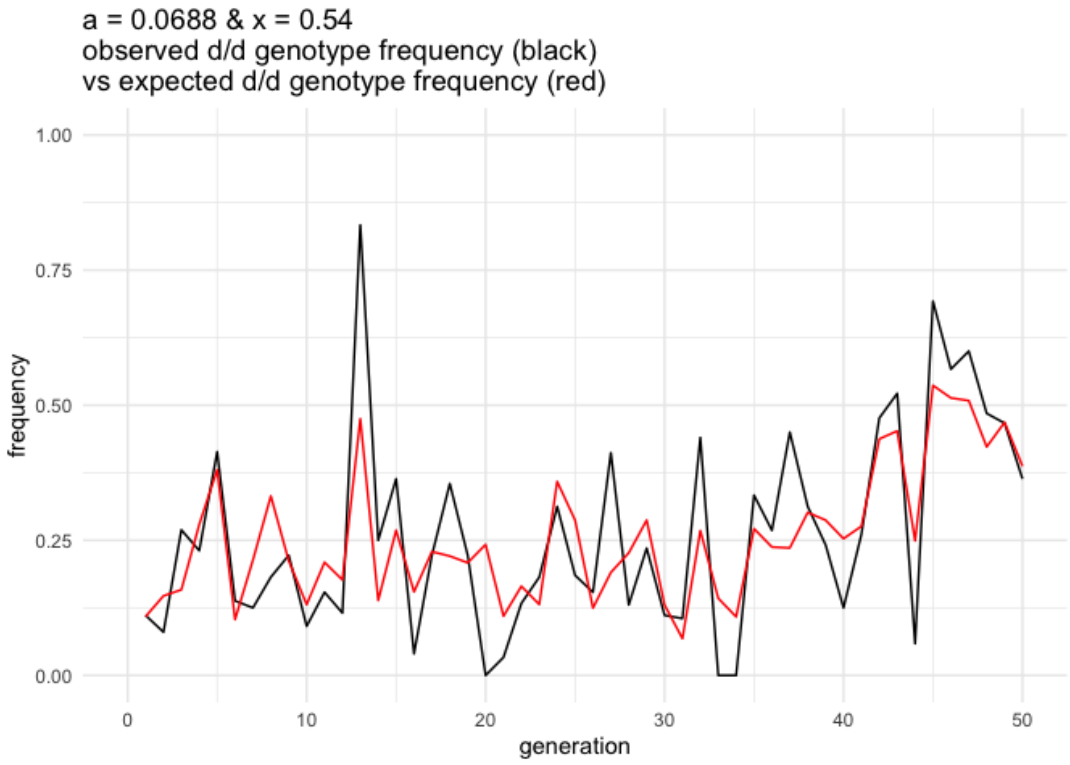


a = 0.0688 & x = 0.5
observed wt/wt genotype frequency (black)
vs expected wt/wt genotype frequency (red)

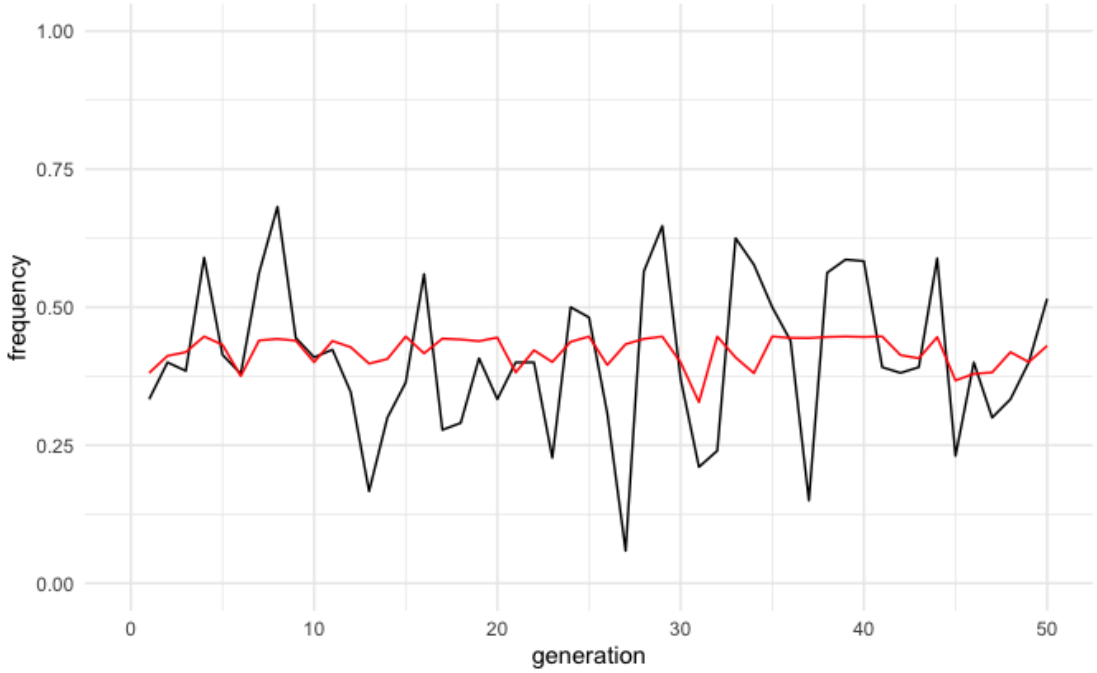


x > a/2:

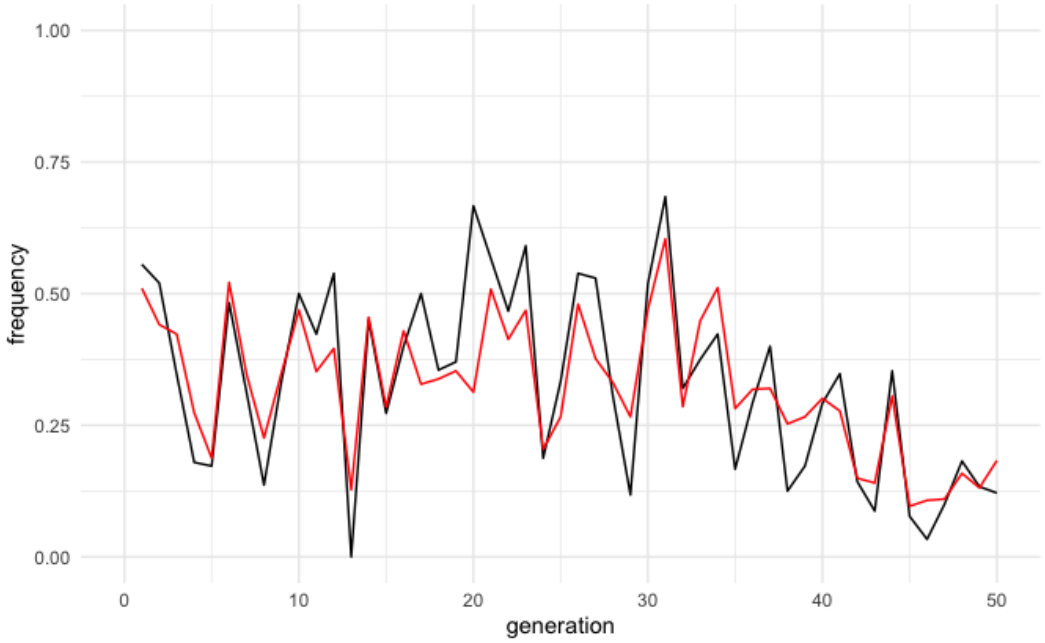

a = 0.0688 & x = 0.54
observed drive frequency (black)
vs expected drive frequency (red)
1.00
0.75
0.50
0.25
0.00
frequency
0
10
20
30
40
50
generation


a = 0.0688 & x = 0.54
observed d/d genotype frequency (black)
vs expected d/d genotype frequency (red)
1.00
0.75
0.50
0.25
0.00
frequency
0
10
20
30
40
50
generation

a = 0.0688 & x = 0.54
observed d/wt genotype frequency (black)
vs expected d/wt genotype frequency (red)



a = 0.0688 & x = 0.54
observed wt/wt genotype frequency (black)
vs expected wt/wt genotype frequency (red)



Percent errors in drive frequency predictions: