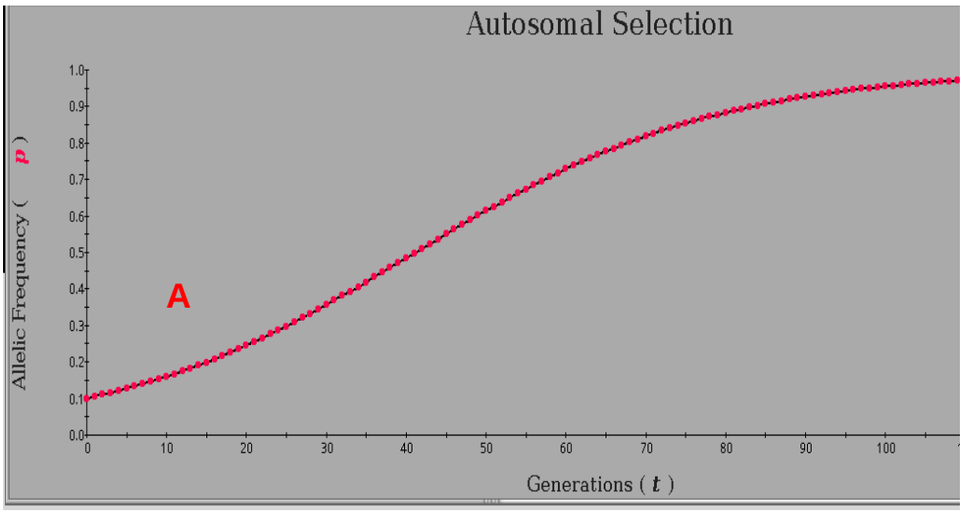
Model: Selection on Diallelic Autosomal Locus

- Generation (t-1) genotypes: **AA** **Aa** **aa**
- ***p*** corresponds to the frequency of allele **A**
- ***q*** corresponds to the frequency of allele **a**
- **Fitness Coefficient**: ***w*** expresses the relative fitness of the genotypes
- **Selection Coefficient**: ***s*** expresses the relative fitness of the phenotype
- **Degree of Dominance**: ***h*** relates to the amount of dominance of A to a

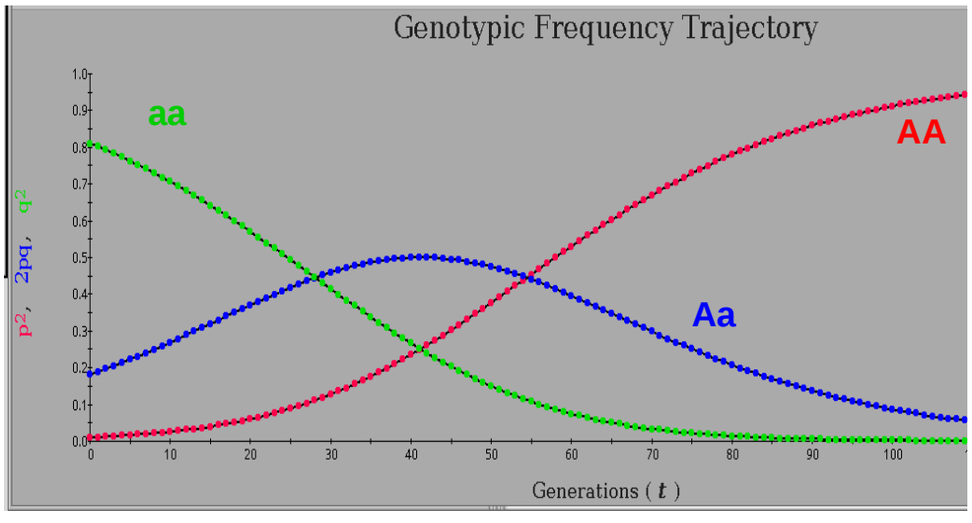
Model and Parameters

Frequency of Alleles before selection: $1 = p^2 + 2pq + q^2$

Frequency of Alleles after selection: $\bar{w} = p^2 w_{AA} + 2pqw_{Aa} + q^2 w_{aa}$



- When w_{AA}=1 and w_{Aa}=0.95, what happens to **A** over time?
- How are the genotypic frequencies changing over time with these conditions?



If ***s***=0 → phenotype is neutral
If ***s***=1 → phenotype is lethal

If ***h***=0 → A is dominant
If ***h***=1 → a is dominant
If ***h***=0.5 → Aa has intermediate fitness

$w_{AA} = 1$
$w_{Aa} = 1 - hs$
$w_{aa} = 1 - s$

Defaults of the Populus model