

Livestock Breeding and Genomics - Exercise 4

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Problem 1: QTL Data

Estimate genotypic values a and d and predict breeding values for all animals using the QTL-data given under:

https://charlotte-ngs.github.io/lbgfs2022/data/p1_qtl_1_loci.csv

Problem 2: Increase Effects of Genotype on Phenotype

Change the phenotypic records in the above given dataset such that the QTL explains 50 of the genetic variation when a heritability of 0.45 is assumed. It is assumed that the QTL acts purely additively, hence the genotypic value of the heterozygotes can be set to $d = 0$.

Show the results as a scatter plot of all phenotypic values for the QTL genotypes.