We simulate data from

$$\mathbf{Y} = \mathbf{X}\beta + b + \varepsilon \tag{31}$$

where the random effect b and the error variance ε are assigned the distributions

$$b \sim \mathcal{N}(0, \eta\mathbf{\Phi}) \qquad \varepsilon \sim \mathcal{N}(0, (1-\eta)\mathbf{I}) \tag{32}$$

and $\eta = 0.1$. $n = 1k, p = 5k, X_kiship = 10k$. 1% of the 5k SNPs are causal.

Scenario 1

All the causal SNPs are included in the calculation of the kinship matrix.
$\mathbf{X}^{(kinship)} = \left[\mathbf{X}^{(other)}; \mathbf{X}^{(causal)}\right]$

Say why this scenario is interesting

Scenario 2

None of the causal SNPs are included in the calculation of the kinship matrix.
$\mathbf{X}^{(kinship)} = \left[\mathbf{X}^{(other)}\right]$

Say why interesting

Explain that these are 2 extremes