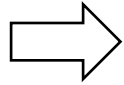
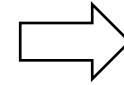


GWAS simulation

Simulate causal variants with a value of M drawn from a prior distribution



Calculate effect size:
 $\alpha_{\text{SNP}i} = s^{\tau}$, where τ is drawn from a prior distribution



Determine number of significant variants based on power (simulating GWAS)

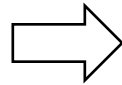
Rejection algorithm

Step 1: Compute:

$$\sum_{\text{bin}_{i=1}}^6 \frac{|\alpha_i^{\text{emp}} - \alpha_i^{\text{sim}}|}{\alpha_i^{\text{emp}}} < 0.6$$

→ Accept (M, τ)

→ Repeat until 10,000 acceptances are obtained



Step 2: Compute:

$$\sum_{\text{bin}_{i=1}}^6 (\text{GWAS hits}_i^{\text{emp}} - \text{GWAS hits}_i^{\text{sim}})^2$$

→ Select the best 10%

→ Posterior distribution of M and τ