First simulation Cov X = diag (nX)

→ STRONG effects

Data : $Y = \alpha + \beta X + \varepsilon$

→ $\alpha = 3$

→ $\beta = (3, 3, \dots, 3)$

→ $X = [\underbrace{X_1, X_2, \dots, X_5}_{\text{seen}}, \underbrace{X_6, \dots, X_{10}}_{\text{hidden}}]$

→ $\varepsilon \sim N(0, 1)$

Model lm ($Y \sim X_1 + \dots + X_5$)

nSample = (5, 10, 15, ..., 150)

nsim = 100

Average RMSE.

→ Tapering effects

$\beta = \exp\left(\text{seq}\left(\log(3), \log(0.005), \text{length} = 21 \right) \right)$

$\beta =$ 3 3.17 1.58 ... 0.06 0.05.

$\underbrace{\beta_1}_{\text{seen}}$ $\underbrace{\beta_2 \dots \beta_5}_{\text{unseen}}$ $\underbrace{\beta_6}_{\text{seen}}$ $\beta_7 \dots \beta_{10}$ $\underbrace{\beta_{11}}_{\text{seen}}$ $\beta_{12} \dots \beta_{15}$ $\underbrace{\beta_{16}}_{\text{seen}}$ $\beta_{17} \dots \beta_{20}$ $\underbrace{\beta_{21}}_{\text{seen}}$

Second simulation Cov X = matrix (rep (0.5, 21 * 21), ncol = 21)

diag Cov X = 1