

Recap:

□ Variance and Inbreeding

$$\text{var}(u_i) = (1+F_i)\sigma_u^2$$

with F_i : inbreeding coefficient
of animal i

□ All information available to predict breeding values
using BLUP animal model

$$\text{MME: } \begin{bmatrix} X^T X & X^T Z \\ Z^T X & Z^T Z + A^{-1} \lambda \end{bmatrix} \begin{bmatrix} \beta \\ \hat{u} \end{bmatrix} = \begin{bmatrix} X^T y \\ Z^T y \end{bmatrix}$$

with $\lambda = \frac{\sigma_e^2}{\sigma_u^2}$) A^{-1} : inverse numerator
relationship
matrix