

# Individuals

0	2	2	1	1	0	1
0	2	1	0	1		
2						
...						

# Loci

**X**

$$E[x_{ij} | T] = 2p_i^T,$$

$$\text{Var}(x_{ij} | T) = 2p_i^T (1 - p_i^T) (1 + f_j^T),$$

$$\text{Cov}(x_{ij}, x_{ik} | T) = 4p_i^T (1 - p_i^T) \varphi_{jk}^T,$$

$$(1 - F_{\text{IT}}) = (1 - F_{\text{IS}})(1 - F_{\text{ST}}),$$

$$(1 - f_j^T) = \left(1 - f_j^{L_j}\right) \left(1 - f_{L_j}^T\right),$$

$$F_{\text{ST}} = \sum_{j=1}^n w_j f_{L_j}^T,$$

$$\hat{p}_i^T = \frac{1}{2} \sum_{j=1}^n w_j x_{ij},$$

$$\hat{\varphi}_{jk}^{T,\text{new}} \xrightarrow[m \rightarrow \infty]{\text{a.s.}} \varphi_{jk}^T.$$

E, Var, Cov, round, sgn,

logit,  $\xrightarrow[m \rightarrow \infty]{\text{a.s.}}$ ,  $\xrightarrow[n \rightarrow \infty]{}$ ,

$\xrightarrow[n,m \rightarrow \infty]{\text{a.s.}}$ ,  $x_{ij}$ ,  $\mathbf{x}_i$ ,  $\mathbf{X}$ ,  $p_i^T$ ,  $\hat{p}_i^T$ ,

$F_{\text{ST}}$ ,  $F_{\text{IT}}$ ,  $F_{\text{IS}}$ ,  $f_B^A$ ,  $f_j^T$ ,  $f_j^{L_j}$ ,

$f_{L_j}^T$ ,  $\varphi_{jk}^T$ ,  $\Phi^T$ ,  $\varphi_{jk}^{L_{jk}}$ ,  $f_{L_{jk}}^T$ ,

$f_{L_j}^{L_{jk}}$ ,  $R_{\text{ST}}$ ,  $\phi_{\text{ST}}$ ,  $G_{\text{ST}}$ ,  $G'_{\text{ST}}$ ,

$\hat{F}_{\text{ST},i}^{\text{sample}}$ ,  $\hat{F}_{\text{ST}}$ ,  $\hat{F}_{\text{ST}}^{\text{indep}}$ ,  $\hat{F}_{\text{ST}}^{\text{WC}}$ ,

$\hat{F}_{\text{ST}}^{\text{Hudson}}$ ,  $\hat{F}_{\text{ST}}^{\text{HudsonK}}$ ,  $\hat{\varphi}_{jk}^T$ ,

$\hat{\Phi}^T$ ,  $\hat{f}_j^T$ ,  $\hat{\varphi}_{jk}^{T,\text{std}}$ ,  $\hat{f}_j^{T,\text{std}}$ ,

$\hat{f}_j^{T,\text{stdII}}$ ,  $\hat{f}_j^{T,\text{stdIII}}$ ,  $\hat{F}_{\text{ST}}^{\text{std}}$ ,  $\hat{F}'_{\text{ST}}$ ,

$\hat{F}_{\text{ST}}^{\text{II}}$ ,  $\hat{\varphi}_{jk}^{T,\text{new}}$ ,  $\hat{\varphi}_{\min}^{T,\text{new}}$ ,

$\hat{f}_j^{T,\text{new}}$ ,  $\hat{F}_{\text{ST}}^{\text{new}}$ ,  $\hat{\varphi}_{jk}^{L_{jk},\text{beagle}}$ ,

$\hat{f}_j^{L_j,\text{beagle}}$ ,  $\overline{p(1-p)}^T$ ,  $A_{jk}$ ,

$\hat{A}_{\min}$ , SRMSD $_p$ , AUC $_{\text{PR}}$ .