

Loci

Individuals

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

X

$$\mathbb{E}[\textcolor{blue}{x}_{ij}|T] = 2p_i,$$

$$\text{Var}(\textcolor{blue}{x}_{ij}|T) = 2p_i(1-p_i)(1+f_j),$$

$$\text{Cov}(\textcolor{blue}{x}_{ij}, \textcolor{blue}{x}_{ik}|T) = 4p_i(1-p_i)\varphi_{jk},$$

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

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

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

$$\hat{p}_i = \frac{1}{2} \sum_{j=1}^n w_j \textcolor{blue}{x}_{ij},$$

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

\mathbb{E} , Var , Cov , round , sgn ,

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

$\xrightarrow[n, m \rightarrow \infty]{\text{a.s.}}$, $\textcolor{blue}{x}_{ij}$, $\textcolor{blue}{x}_i$, $\textcolor{blue}{X}$, p_i , \hat{p}_i ,

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

f_{L_j} , φ_{jk} , Φ , $\varphi_{jk}^{L_{jk}}$, $f_{L_{jk}}$, $f_{L_j}^{L_{jk}}$,

R_{ST} , ϕ_{ST} , G_{ST} , G'_{ST} ,

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

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

\hat{f}_j , $\hat{\varphi}_{jk}^{\text{std}}$, \hat{f}_j^{std} , \hat{f}_j^{stdII} , $\hat{f}_j^{\text{stdIII}}$,

$\hat{F}_{\text{ST}}^{\text{std}}$, \hat{F}_{ST}' , \hat{F}_{ST}'' , $\hat{\varphi}_{jk}^{\text{new}}$, $\hat{\varphi}_{\min}^{\text{new}}$,

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

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

\hat{A}_{\min} , SRMSD_p , AUC_{PR} .