$$\Sigma_{11}^{(ij)} = \sigma^2 K(\boldsymbol{s}_i, \boldsymbol{s}_j) = \sigma^2 \exp\left(-\frac{||\boldsymbol{s}_i - \boldsymbol{s}_j||^2}{2\phi^2}\right)$$

$$\Sigma_{22}^{(ij)} = \sigma^2 K(\boldsymbol{s}_i^*, \boldsymbol{s}_j^*) = \sigma^2 \exp\left(-\frac{||\boldsymbol{s}_i^* - \boldsymbol{s}_j^*||^2}{2\phi^2}\right)$$

$$\Sigma_{12}^{(ij)} = \sigma^2 K(\boldsymbol{s}_i, \boldsymbol{s}_j^*) = \sigma^2 \exp\left(-\frac{||\boldsymbol{s}_i - \boldsymbol{s}_j^*||^2}{2\phi^2}\right)$$