Errata:

- Page 73 (transpose and signs)

$$\Phi^{g(i,j)} = (\mathbf{r}_j^P - \mathbf{r}_i^P)\mathbf{u}^\perp$$
$$= (x_j^P - x_i^P)\sin\theta - (y_j^P - y_i^P)\cos\theta = 0 \qquad \textbf{(3.4.3)}$$

where θ is given by Eq. 3.4.2 and $\mathbf{u}^\perp \equiv [-\sin\theta, \cos\theta]^T$; that is, $\mathbf{u} = [\cos\theta, \sin\theta]^T$ is a unit vector along the line from P_i to P_j in Fig. 3.4.2.

- Page 73 (perpendicular sign, both equations)

$$\Phi_{\mathbf{q}_i}^{g(i,j)} = \left[-\mathbf{u}^T, -\mathbf{s}_i'^{P^T}\mathbf{B}_i^T\mathbf{u} + (\mathbf{r}_j^P - \mathbf{r}_i^P)^T\mathbf{u}^\perp\left(\frac{R_i}{R_i + R_j}\right)\right]$$
$$\Phi_{\mathbf{q}_j}^{g(i,j)} = \left[\mathbf{u}^T, \mathbf{s}_j'^{P^T}\mathbf{B}_j^T\mathbf{u} + (\mathbf{r}_j^P - \mathbf{r}_i^P)^T\mathbf{u}^\perp\left(\frac{R_j}{R_i + R_j}\right)\right] \qquad \textbf{(3.4.4)}$$