$$\sum_{i,j \in -1,0,1} A^{i,j}_{G,0,0} U^h_{i,j} = 0 \tag{1}$$

Setting $2h_\xi = h_\xi^- + h_\xi^+$ with ξ being x or y.
The values of the nonzero entries are the following:
Four corner nodes $(i,j \in \{-,+\})$:

$$A^{i,j}_{G,0,0} = \frac{k^2 h_x^i h_y^j}{36} + \frac{h_x^i}{6 h_y^j} + \frac{h_y^j}{6 h_x^i}$$

Four side nodes:

$$A^{\pm,0}_{G,0,0} = \frac{k^2 h_x^\pm h_y}{9} + \frac{2 h_y}{3 h_x^\pm} - \frac{h_x^\pm}{3} \frac{h_y}{h_y^- h_y^+}$$

$$A^{0,\pm}_{G,0,0} = \frac{k^2 h_x h_y^\pm}{9} + \frac{2 h_x}{3 h_y^\pm} - \frac{h_y^\pm}{3} \frac{h_x}{h_x^- h_x^+}$$

Center node:

$$A^{0,0}_{G,0,0} = \frac{4 k^2 h_x h_y}{9} - \frac{4 h_x}{3} \frac{h_y}{h_y^- h_y^+} - \frac{4 h_y}{3} \frac{h_x}{h_x^- h_x^+}$$

Setting $\alpha_\xi^\pm h_\xi = h_\xi^\pm$ with ξ being x or y.
Four side nodes:

$$A^{\pm,0}_{G,0,0} = \frac{k^2 h_x^\pm h_y}{9} + \frac{2 h_y}{3 h_x^\pm} - \frac{h_x^\pm}{3 \alpha_y^- \alpha_y^+ h_y}$$

$$A^{0,\pm}_{G,0,0} = \frac{k^2 h_x h_y^\pm}{9} + \frac{2 h_x}{3 h_y^\pm} - \frac{h_y^\pm}{3 \alpha_x^- \alpha_x^+ h_x}$$

Center node:

$$A^{0,0}_{G,0,0} = \frac{4 k^2 h_x h_y}{9} - \frac{4 h_x}{3 \alpha_y^- \alpha_y^+ h_y} - \frac{4 h_y}{3 \alpha_x^- \alpha_x^+ h_x}$$

$$k^2 = \frac{6 \left(2 f_x^+ h_x^- \left((h_x^+)^2 h_y - (h_y^+)^2 h_y^- - h_y^+ (h_y^-)^2 \right) + 2 f_x^- h_x^+ \left((h_x^-)^2 h_y - (h_y^+)^2 h_y^- - h_y^+ (h_y^-)^2 \right) + 2 f_y^+ h_y^- \right.}{}$$

$$\gamma_0 + \sum_{\xi \in \{x,y\}} \sum_{i \in \{-,+\}} \gamma_\xi^i f_\xi^i + \tag{2}$$

1

Terme indépendant en haut

$$+ 12 h_x^- h_y^+ \left(\left(h_x^+ \right)^2 + \left(h_y^- \right)^2 \right)$$

$$+ 12 h_x^- h_y^- \left(\left(h_x^+ \right)^2 + \left(h_y^+ \right)^2 \right)$$

$$+ 12 h_x^+ h_y^+ \left(\left(h_x^- \right)^2 + \left(h_y^- \right)^2 \right)$$

$$+ 12 h_x^+ h_y^- \left(\left(h_x^- \right)^2 + \left(h_y^+ \right)^2 \right)$$

Termes en f en haut

$$12 f_x^+ h_x^- \left(\left(h_x^+ \right)^2 h_y - \left(h_y^+ \right)^2 h_y^- - h_y^+ \left(h_y^- \right)^2 \right) + 12 f_x^- h_x^+ \left(\left(h_x^- \right)^2 h_y - \left(h_y^+ \right)^2 h_y^- - h_y^+ \left(h_y^- \right)^2 \right)$$

$$+ 12 f_y^+ h_y^- \left(h_x \left(h_y^+ \right)^2 - \left(h_x^+ \right)^2 h_x^- - h_x^+ \left(h_x^- \right)^2 \right) + 12 f_y^- h_y^+ \left(h_x \left(h_y^- \right)^2 - h_x^+ \left(h_x^- \right)^2 - \left(h_x^+ \right)^2 h_x^- \right)$$

Terme indépendant en bas (en facteur des 4h)

$$16 h_x h_y$$

Termes en f en bas (en facteur des 4h)

$$4 f_x^+ h_x^+ h_y \qquad + \qquad 4 f_x^- h_x^- h_y \qquad + \qquad 4 f_y^+ h_x h_y^+ \qquad + \qquad 4 f_y^- h_x h_y^-$$

Termes en g en bas (en facteur des 4h)

$$+ h_x^+ h_y^+ g^{++} + h_x^+ h_y^- g^{+-} + h_x^- h_y^+ g^{-+} + h_x^- h_y^- g^{--}$$