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CC

Appendix 1

$$K_{11} = -A_{11}k^2 - \frac{A_{66}}{R^2}n^2$$

$$K_{12} = -\frac{A_{12}}{R}kn - \frac{A_{66}}{R}kn$$

$$K_{13} = +\frac{A_{12}}{R}ki$$

$$K_{14} = 0$$

$$K_{15} = 0$$

$$K_{21} = \frac{A_{66}}{R}kn - \frac{A_{12}}{R}kn$$

$$K_{22} = -A_{66}k^2 - \frac{A_{11}}{R^2}n^2 - \frac{D_{66}}{R^2}k^2 - \frac{D_{11}}{R^4}n^2$$

$$K_{23} = +\frac{A_{11}}{R^2}ni + 2\frac{D_{66}}{R^2}k^2ni + \frac{D_{12}}{R^2}k^2ni + \frac{D_{11}}{R^4}n^3i$$

$$K_{24} = \frac{E_{31}}{R^2}ni$$

$$K_{25} = \frac{Q_{31}}{R^2}ni$$

$$K_{31} = -\frac{A_{12}}{R}ki$$

$$K_{32} = +\frac{D_{12}}{R^2}k^2ni + \frac{2D_{66}}{R^2}k^2ni - \frac{D_{11}}{R^4}n^3i - \frac{A_{11}}{R^2}ni$$

$$K_{33} = -D_{11}k^4 - 2\frac{D_{12}}{R^2}k^2n^2 - \frac{4D_{66}}{R^2}k^2n^2 - \frac{D_{11}}{R^4}n^{44} - \frac{A_{11}}{R^2}W + \frac{N_{\theta 0}}{R^2}n^2 + N_{x0}k^2 + (e_0a)^2\left(\frac{N_{\theta 0}}{R^4}n^4 + \frac{N_{\theta 0}}{R^2}k^2n^2 + N_{x0}k^4 + \frac{N_{x0}}{R^2}k^2n^2\right)$$

$$K_{34} = -E_{31}k^2 + \frac{E_{31}}{R^2}n^2$$

$$K_{35} = -Q_{31}k^2 - \frac{Q_{31}}{R^2}n^2$$

$$K_{41} = 0$$

$$K_{42} = \frac{E_{31}}{R^2}ni$$

$$K_{43} = E_{31}k^2 + \frac{E_{31}}{R^2}n^2$$

$$K_{44} = -X_{11}k^2 - X_{22}n^2 - X_{33} - X_{33}k^2 - X_{33}\frac{n^2}{R^2}$$

$$K_{45} = -Y_{11}k^2 - Y_{22}n^2$$

$$K_{51} = 0$$

$$K_{52} = \frac{Q_{31}}{R^2}ni$$

$$K_{53} = Q_{31}k^2$$

$$K_{54} = -Y_{11}k^2 - Y_{22}n^2 - Y_{33}$$

$$K_{55} = -T_{11}k^2 - T_{22}n^2 - T_{33}$$

$$M_{11} = M_{22} = M_{33} = -I_1 - I_1(e_0a)^2\left(k^2 + \frac{n^2}{R^2}\right)$$