

$$\text{solve} \left( \left\{ \begin{aligned} &\frac{1}{L1} \cdot \text{vg} \cdot \frac{4}{\pi} - \frac{1}{L1} \cdot \text{vCl}s + \text{ws} \cdot iL1c = 0, -\text{vCl}c \cdot \frac{1}{L1} - \text{ws} \cdot iL1s = 0, \frac{1}{L2} \cdot \text{vg} \cdot \frac{4}{\pi} - \frac{1}{L2} \cdot \text{vCl}s \\ &- \frac{1}{L2} \cdot \frac{4}{\pi} \cdot \text{vCF} \cdot \frac{iL2s}{\sqrt{iL2c^2 + iL2s^2}} + \text{ws} \cdot iL2c = 0, -\frac{1}{L2} \cdot \text{vCl}c - \frac{1}{L2} \cdot \frac{4}{\pi} \cdot \text{vCF} \cdot \frac{iL2c}{\sqrt{iL2c^2 + iL2s^2}} \\ &- \text{ws} \cdot iL2s = 0, \frac{1}{CI} \cdot iL1s + \frac{1}{CI} \cdot iL2s + \text{ws} \cdot \text{vCl}c = 0, \frac{1}{CI} \cdot iL1c + \frac{1}{CI} \cdot iL2c - \text{ws} \cdot \text{vCl}s = 0, \frac{1}{CF} \\ &\cdot \frac{2}{\pi} \cdot \sqrt{iL2c^2 + iL2s^2} - \frac{1}{CF} \cdot \frac{\text{vCF}}{Rr} \end{aligned} \right\}, [iL1s, iL1c, iL2s, iL2c, \text{vCl}s, \text{vCl}c, \text{vCF}] \right)$$

$$\left[ \left[ iL1s = (32 \pi \text{ws}^2 \text{vg} CI L1 Rr) / (CI^2 LI^2 L2^2 \pi^4 \text{ws}^6 - 2 CI LI^2 L2 \pi^4 \text{ws}^4 \right. \right. \quad (1)$$

$$\left. - 2 CI LI L2^2 \pi^4 \text{ws}^4 + 64 CI^2 LI^2 Rr^2 \text{ws}^4 + LI^2 \pi^4 \text{ws}^2 + 2 LI L2 \pi^4 \text{ws}^2 + L2^2 \pi^4 \text{ws}^2 \right.$$

$$\left. - 128 CI LI Rr^2 \text{ws}^2 + 64 Rr^2), iL1c = -(4 \text{ws} \text{vg} CI (CI LI L2^2 \pi^4 \text{ws}^4 - LI L2 \pi^4 \text{ws}^2 \right.$$

$$\left. - L2^2 \pi^4 \text{ws}^2 + 64 CI LI Rr^2 \text{ws}^2 - 64 Rr^2) \right) / (\pi (CI^2 LI^2 L2^2 \pi^4 \text{ws}^6 - 2 CI LI^2 L2 \pi^4 \text{ws}^4$$

$$\left. - 2 CI LI L2^2 \pi^4 \text{ws}^4 + 64 CI^2 LI^2 Rr^2 \text{ws}^4 + LI^2 \pi^4 \text{ws}^2 + 2 LI L2 \pi^4 \text{ws}^2 + L2^2 \pi^4 \text{ws}^2 \right.$$

$$\left. - 128 CI LI Rr^2 \text{ws}^2 + 64 Rr^2), iL2s = (32 Rr LI CI \text{vg} \text{ws}^2 \pi (CI LI \text{ws}^2 - 1)) / \right.$$

$$\left. (CI^2 LI^2 L2^2 \pi^4 \text{ws}^6 - 2 CI LI^2 L2 \pi^4 \text{ws}^4 - 2 CI LI L2^2 \pi^4 \text{ws}^4 + 64 CI^2 LI^2 Rr^2 \text{ws}^4 \right.$$

$$\left. + LI^2 \pi^4 \text{ws}^2 + 2 LI L2 \pi^4 \text{ws}^2 + L2^2 \pi^4 \text{ws}^2 - 128 CI LI Rr^2 \text{ws}^2 + 64 Rr^2), iL2c = \right.$$

$$\left. - (4 \text{vg} CI LI \text{ws}^3 \pi^3 (CI LI L2 \text{ws}^2 - LI - L2)) / (CI^2 LI^2 L2^2 \pi^4 \text{ws}^6 - 2 CI LI^2 L2 \pi^4 \text{ws}^4 \right.$$

$$\left. - 2 CI LI L2^2 \pi^4 \text{ws}^4 + 64 CI^2 LI^2 Rr^2 \text{ws}^4 + LI^2 \pi^4 \text{ws}^2 + 2 LI L2 \pi^4 \text{ws}^2 + L2^2 \pi^4 \text{ws}^2 \right.$$

$$\left. - 128 CI LI Rr^2 \text{ws}^2 + 64 Rr^2), \text{vCl}s = -(4 \text{vg} (CI LI^2 L2 \pi^4 \text{ws}^4 + CI LI L2^2 \pi^4 \text{ws}^4 \right.$$

$$\left. - LI^2 \pi^4 \text{ws}^2 - 2 LI L2 \pi^4 \text{ws}^2 - L2^2 \pi^4 \text{ws}^2 + 64 CI LI Rr^2 \text{ws}^2 - 64 Rr^2)) / \right.$$

$$\begin{aligned}
& \left( \pi \left( CI^2 LI^2 L2^2 \pi^4 ws^6 - 2 CI LI^2 L2 \pi^4 ws^4 - 2 CI LI L2^2 \pi^4 ws^4 + 64 CI^2 LI^2 Rr^2 ws^4 \right. \right. \\
& \left. \left. + LI^2 \pi^4 ws^2 + 2 LI L2 \pi^4 ws^2 + L2^2 \pi^4 ws^2 - 128 CI LI Rr^2 ws^2 + 64 Rr^2 \right) \right), vCIc = \\
& - (32 Rr LI^2 CI vg ws^3 \pi) / \left( CI^2 LI^2 L2^2 \pi^4 ws^6 - 2 CI LI^2 L2 \pi^4 ws^4 - 2 CI LI L2^2 \pi^4 ws^4 \right. \\
& \left. + 64 CI^2 LI^2 Rr^2 ws^4 + LI^2 \pi^4 ws^2 + 2 LI L2 \pi^4 ws^2 + L2^2 \pi^4 ws^2 - 128 CI LI Rr^2 ws^2 \right. \\
& \left. + 64 Rr^2 \right), vCF = \frac{1}{\pi} \left( 8 RootOf \left( \left( CI^2 LI^2 L2^2 \pi^4 ws^6 - 2 CI LI^2 L2 \pi^4 ws^4 \right. \right. \right. \\
& \left. \left. - 2 CI LI L2^2 \pi^4 ws^4 + 64 CI^2 LI^2 Rr^2 ws^4 + LI^2 \pi^4 ws^2 + 2 LI L2 \pi^4 ws^2 + L2^2 \pi^4 ws^2 \right. \right. \\
& \left. \left. - 128 CI LI Rr^2 ws^2 + 64 Rr^2 \right) \_Z^2 - \pi^2 \right) ws^2 vg LI CI Rr) \left. \right] \left. \right]
\end{aligned}$$