

$$90^\circ - \tau/2 - 180^\circ - \tau/2 - 90^\circ - d_0 - 90^\circ - \tau/2 - 180^\circ - \tau/2$$

System :

$$I(IS_n)$$

$$I_{2Q}(\tau, J) = \sin^2(\pi J \tau)$$

$$I(I_2S_n)$$

$$I_{3Q}(\tau, J) = -1/2 \sin^4(\pi J \tau)$$

$$\begin{aligned} I_{2Q}(\tau, J) &= -\sqrt{2}/4 + \sqrt{2}/4 \cos(4\pi J \tau) \\ &= 2\sqrt{2} \cos^4(\pi J \tau) - 2\sqrt{2} \cos^2(\pi J \tau) \\ &= -2\sqrt{2} \cos^2(\pi J \tau) \sin^2(\pi J \tau) \end{aligned}$$

$$I(I_3S_n)$$

$$\begin{aligned} I_{2Q}(\tau, J) &= 13/32 \cos(6\pi J \tau) + 9/16 \cos(4\pi J \tau) + 3/32 \cos(2\pi J \tau) - 17/16 \\ &= 13 \cos^6(\pi J \tau) - 15 \cos^4(\pi J \tau) + 3 \cos^2(\pi J \tau) - 1 \end{aligned}$$

$$\begin{aligned} I_{3Q}(\tau, J) &= -3\sqrt{2}/32 \cos(6\pi J \tau) + 3\sqrt{2}/16 \cos(4\pi J \tau) + 3\sqrt{2}/32 \cos(2\pi J \tau) - 3\sqrt{2}/16 \\ &= -3\sqrt{2} \cos^2(\pi J \tau) \sin^4(\pi J \tau) \end{aligned}$$

$$\begin{aligned} I_{4Q}(\tau, J) &= 1/64 \cos(6\pi J \tau) - 3/32 \cos(4\pi J \tau) + 15/64 \cos(2\pi J \tau) - 5/32 \\ &= \frac{1}{2} [\cos^6(\pi J \tau) - 3 \cos^4(\pi J \tau) + 3 \cos^2(\pi J \tau) - 1] \\ &= -\frac{1}{2} \sin^6(\pi J \tau) \end{aligned}$$

$$I(I_4S_n)$$

$$\begin{aligned} I_{2Q}(\tau, J) &= -3/8 \sqrt{2} \cos(8\pi J \tau) + \frac{1}{2} \sqrt{2} \cos(2\pi J \tau) - 3/2 \sqrt{2} \cos(4\pi J \tau) - 1/2 \sqrt{2} \cos(6\pi J \tau) + \\ &15/8 \sqrt{2} \\ &= -48 \sqrt{2} \cos^8(\pi J \tau) + 80 \sqrt{2} \cos^6(\pi J \tau) - 48 \sqrt{2} \cos^4(\pi J \tau) + 16 \sqrt{2} \cos^2(\pi J \tau) \end{aligned}$$

$$\begin{aligned} I_{3Q}(\tau, J) &= 319/256 + 53/256 \cos(8\pi J \tau) - 13/64 \cos(4\pi J \tau) - 35/32 \cos(2\pi J \tau) - 5/32 \cos(6\pi J \tau) \\ &= 53/2 \cos^8(\pi J \tau) - 58 \cos^6(\pi J \tau) + 39 \cos^4(\pi J \tau) - 10 \cos^2(\pi J \tau) + 5/2 \end{aligned}$$

$$\begin{aligned} I_{4Q}(\tau, J) &= -1/32 \sqrt{2} \cos(8\pi J \tau) + 1/8 \sqrt{2} \cos(6\pi J \tau) - 1/8 \sqrt{2} \cos(4\pi J \tau) - 1/8 \sqrt{2} \cos(2\pi J \tau) + \\ &5/32 \sqrt{2} \\ &= 4\sqrt{2} \cos^2(\pi J \tau) \sin^6(\pi J \tau) \end{aligned}$$

$$\begin{aligned} I_{5Q}(\tau, J) &= 1/256 \cos(8\pi J \tau) - 1/32 \cos(6\pi J \tau) + 7/64 \cos(4\pi J \tau) - 7/32 \cos(2\pi J \tau) + 35/256 \\ &= \frac{1}{2} \sin^8(\pi J \tau) \end{aligned}$$