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Appendix

Coefficients of Eqs. (11) and (12)

$$E_1 = \frac{(f_1 A_1 + 6\bar{A}_1 A_1^2 f_1)}{(\omega_1^2 - (\Omega + \omega_1)^2)}, E_2 = \frac{(f_2 A_1 + 6\bar{A}_2 A_1^2 f_2)}{(\omega_1^2 - (2\Omega + \omega_1)^2)},$$

$$E_3 = \frac{(3\alpha A_1^2 - \alpha_1 A_1^2)}{-3\omega_1^2}, E_4 = \frac{(0.5 f_1 + 3A_1\bar{A}_1 f_1)}{(\omega_1^2 - 4\Omega^2)},$$

$$E_5 = \frac{1.5 A_1^2 f_1}{(\omega_1^2 - (\Omega + 2\omega_1)^2)}, E_6 = \frac{2\bar{A}_1^3 f_2}{(\omega_1^2 - (2\Omega - 3\omega_1)^2)},$$

$$E_7 = \frac{1.5\ A_1^2 f_2}{(\omega_1^2 - (2\Omega + 2\omega_1)^2)}, E_8 = \frac{1.5\bar{A}_1^2 f_2}{(\omega_1^2 - (2\Omega - 2\omega_1)^2)},$$

$$E_9 = \frac{2\bar{A}_1^3 f_1}{(\omega_1^2 - (\Omega - 3\omega_1)^2)}, E_{10} = \frac{2A_1^3 f_1}{(\omega_1^2 - (\Omega + 3\omega_1)^2)},$$

$$E_{11} = \frac{(4\alpha\bar{A}_1^3 - \alpha_1\bar{A}_1^3)}{-8\omega_1^2}, E_{12} = \frac{2A_1^3 f_2}{(\omega_1^2 - (2\Omega + 3\omega_1)^2)},$$

$$E_{13} = \frac{(f_1\bar{A}_1 + 6A_1\bar{A}_1^2 f_1)}{(\omega_1^2 - (\Omega - \omega_1)^2)}, E_{14} = \frac{(3\alpha\bar{A}_1^2 - \alpha_1\bar{A}_1^2)}{3\omega_1^2},$$

$$E_{15} = \frac{(4\alpha A_1^3 - \alpha_1 A_1^3)}{8\omega_1^2} + E_{16} = \frac{(f_2\bar{A}_1 + 6A_1\bar{A}_1^2 f_2)}{(\omega_1^2 - (2\Omega - \omega_1)^2)},$$

$$E_{17} = \frac{(0.5 f_1 + 3A_1\bar{A}_1 f_1)}{(\omega_1^2 - \Omega^2)}, E_{18} = \frac{2\bar{A}_1^3 f_2}{(\omega_1^2 - (2\Omega - 3\omega_1)^2)}$$

$$E_{19} = \frac{\gamma_2 A_1}{(\omega_2^2 - \omega_1^2)}.$$