

$$\begin{aligned}
& (\cos(i_1) (4 p^2 \cos(j_1) (\alpha_2 \beta_2 p^2 + \cos(i_2) \cos(j_2)) \rho_1^2 \beta_1^4 - \\
& \quad 4 p^2 \cos(j_1) \beta_2 (2 \cos(i_2) \cos(j_2) \beta_2 + \alpha_2 (2 p^2 \beta_2^2 - 1)) \rho_1 \rho_2 \beta_1^2 + \cos(j_2) \alpha_2 \rho_1 \rho_2 \beta_1 + \\
& \quad \cos(j_1) \beta_2 (4 p^2 \cos(i_2) \cos(j_2) \beta_2^3 + \alpha_2 (1 - 2 p^2 \beta_2^2)^2) \rho_2^2) - \alpha_1 (4 p^4 (\alpha_2 \beta_2 p^2 + \cos(i_2) \cos(j_2)) \rho_1^2 \beta_1^5 - \\
& \quad 4 p^2 \rho_1 (\beta_2 (2 \cos(i_2) \cos(j_2) \beta_2 + \alpha_2 (2 p^2 \beta_2^2 - 1)) \rho_2 p^2 + (\alpha_2 \beta_2 p^2 + \cos(i_2) \cos(j_2)) \rho_1) \beta_1^3 + \\
& \quad (\beta_2 (4 p^2 \cos(i_2) \cos(j_2) \beta_2^3 + \alpha_2 (1 - 2 p^2 \beta_2^2)^2) \rho_2^2 p^2 + 2 \beta_2 (2 \cos(i_2) \cos(j_2) \beta_2 + \alpha_2 (2 p^2 \beta_2^2 - 1)) \rho_1 \rho_2 p^2 + \\
& \quad (\alpha_2 \beta_2 p^2 + \cos(i_2) \cos(j_2)) \rho_1^2) \beta_1 + \cos(i_2) \cos(j_1) \beta_2 \rho_1 \rho_2)) / \\
& (\cos(i_1) (4 p^2 \cos(j_1) (\alpha_2 \beta_2 p^2 + \cos(i_2) \cos(j_2)) \rho_1^2 \beta_1^4 - 4 p^2 \cos(j_1) \beta_2 (2 \cos(i_2) \cos(j_2) \beta_2 + \alpha_2 (2 p^2 \beta_2^2 - 1)) \rho_1 \rho_2 \beta_1^2 + \\
& \quad \cos(j_2) \alpha_2 \rho_1 \rho_2 \beta_1 + \cos(j_1) \beta_2 (4 p^2 \cos(i_2) \cos(j_2) \beta_2^3 + \alpha_2 (1 - 2 p^2 \beta_2^2)^2) \rho_2^2) + \\
& \quad \alpha_1 (4 p^4 (\alpha_2 \beta_2 p^2 + \cos(i_2) \cos(j_2)) \rho_1^2 \beta_1^5 - \\
& \quad 4 p^2 \rho_1 (\beta_2 (2 \cos(i_2) \cos(j_2) \beta_2 + \alpha_2 (2 p^2 \beta_2^2 - 1)) \rho_2 p^2 + (\alpha_2 \beta_2 p^2 + \cos(i_2) \cos(j_2)) \rho_1) \beta_1^3 + \\
& \quad (\beta_2 (4 p^2 \cos(i_2) \cos(j_2) \beta_2^3 + \alpha_2 (1 - 2 p^2 \beta_2^2)^2) \rho_2^2 p^2 + 2 \beta_2 (2 \cos(i_2) \cos(j_2) \beta_2 + \alpha_2 (2 p^2 \beta_2^2 - 1)) \rho_1 \rho_2 p^2 + \\
& \quad (\alpha_2 \beta_2 p^2 + \cos(i_2) \cos(j_2)) \rho_1^2) \beta_1 + \cos(i_2) \cos(j_1) \beta_2 \rho_1 \rho_2))
\end{aligned}$$

In terms of 11 parameters

$$\begin{aligned}
& \left(-4 \alpha_2 \beta_1 \beta_2 (\beta_1^2 \rho_1 - \beta_2^2 \rho_2)^2 \sin^6(\theta) + 4 \sqrt{\cos^2(\theta)} \sqrt{1 - \frac{\sin^2(\theta) \beta_1^2}{\alpha_1^2}} \alpha_1 \alpha_2 \beta_2 (\beta_1^2 \rho_1 - \beta_2^2 \rho_2)^2 \sin^4(\theta) - \right. \\
& \quad 2 \alpha_1^2 \beta_1 (\beta_1^2 \rho_1 - \beta_2^2 \rho_2) \left(2 \alpha_2 \beta_2 (\rho_2 - \rho_1) + 2 \sqrt{1 - \frac{\sin^2(\theta) \alpha_2^2}{\alpha_1^2}} \sqrt{1 - \frac{\sin^2(\theta) \beta_2^2}{\alpha_1^2}} (\beta_1^2 \rho_1 - \beta_2^2 \rho_2) \right) \sin^4(\theta) + \\
& \quad \sqrt{\cos(2\theta) + 1} \sqrt{2 - \frac{2 \sin^2(\theta) \beta_1^2}{\alpha_1^2}} \alpha_1^3 \\
& \quad \left(\sqrt{2 - \frac{2 \sin^2(\theta) \alpha_2^2}{\alpha_1^2}} \sqrt{2 - \frac{2 \sin^2(\theta) \beta_2^2}{\alpha_1^2}} \rho_1 \beta_1^2 - \sqrt{2 - \frac{2 \sin^2(\theta) \alpha_2^2}{\alpha_1^2}} \beta_2^2 \sqrt{2 - \frac{2 \sin^2(\theta) \beta_2^2}{\alpha_1^2}} \rho_2 + 2 \alpha_2 \beta_2 \rho_2 \right) \\
& \quad (\beta_1^2 \rho_1 - \beta_2^2 \rho_2) \sin^2(\theta) + \alpha_1^4 \beta_1 \left(4 \sqrt{1 - \frac{\sin^2(\theta) \alpha_2^2}{\alpha_1^2}} \sqrt{1 - \frac{\sin^2(\theta) \beta_2^2}{\alpha_1^2}} \rho_1 (\beta_1^2 \rho_1 - \beta_2^2 \rho_2) - \alpha_2 \beta_2 (\rho_1 - \rho_2)^2 \right) \sin^2(\theta) + \\
& \quad \sqrt{1 - \frac{\sin^2(\theta) \alpha_2^2}{\alpha_1^2}} (-\alpha_1^6) \rho_1 \left(\sqrt{1 - \frac{\sin^2(\theta) \beta_2^2}{\alpha_1^2}} \beta_1 \rho_1 + \sqrt{1 - \frac{\sin^2(\theta) \beta_1^2}{\alpha_1^2}} \beta_2 \rho_2 \right) + \\
& \quad \left. \sqrt{\cos^2(\theta)} \alpha_1^4 \alpha_2 \rho_2 \left(\sqrt{1 - \frac{\sin^2(\theta) \beta_2^2}{\alpha_1^2}} \beta_1 \rho_1 + \sqrt{1 - \frac{\sin^2(\theta) \beta_1^2}{\alpha_1^2}} \beta_2 \rho_2 \right) \right) / \\
& \left(4 \alpha_2 \beta_1 \beta_2 (\beta_1^2 \rho_1 - \beta_2^2 \rho_2)^2 \sin^6(\theta) + 4 \sqrt{\cos^2(\theta)} \sqrt{1 - \frac{\sin^2(\theta) \beta_1^2}{\alpha_1^2}} \alpha_1 \alpha_2 \beta_2 (\beta_1^2 \rho_1 - \beta_2^2 \rho_2)^2 \sin^4(\theta) + \right. \\
& \quad 2 \alpha_1^2 \beta_1 (\beta_1^2 \rho_1 - \beta_2^2 \rho_2) \left(2 \alpha_2 \beta_2 (\rho_2 - \rho_1) + 2 \sqrt{1 - \frac{\sin^2(\theta) \alpha_2^2}{\alpha_1^2}} \sqrt{1 - \frac{\sin^2(\theta) \beta_2^2}{\alpha_1^2}} (\beta_1^2 \rho_1 - \beta_2^2 \rho_2) \right) \sin^4(\theta) + \\
& \quad \sqrt{\cos(2\theta) + 1} \sqrt{2 - \frac{2 \sin^2(\theta) \beta_1^2}{\alpha_1^2}} \alpha_1^3 \\
& \quad \left(\sqrt{2 - \frac{2 \sin^2(\theta) \alpha_2^2}{\alpha_1^2}} \sqrt{2 - \frac{2 \sin^2(\theta) \beta_2^2}{\alpha_1^2}} \rho_1 \beta_1^2 - \sqrt{2 - \frac{2 \sin^2(\theta) \alpha_2^2}{\alpha_1^2}} \beta_2^2 \sqrt{2 - \frac{2 \sin^2(\theta) \beta_2^2}{\alpha_1^2}} \rho_2 + 2 \alpha_2 \beta_2 \rho_2 \right) \\
& \quad (\beta_1^2 \rho_1 - \beta_2^2 \rho_2) \sin^2(\theta) + \alpha_1^4 \beta_1 \left(\alpha_2 \beta_2 (\rho_1 - \rho_2)^2 + 4 \sqrt{1 - \frac{\sin^2(\theta) \alpha_2^2}{\alpha_1^2}} \sqrt{1 - \frac{\sin^2(\theta) \beta_2^2}{\alpha_1^2}} \rho_1 (\beta_2^2 \rho_2 - \beta_1^2 \rho_1) \right) \sin^2(\theta) + \\
& \quad \sqrt{1 - \frac{\sin^2(\theta) \alpha_2^2}{\alpha_1^2}} \alpha_1^6 \rho_1 \left(\sqrt{1 - \frac{\sin^2(\theta) \beta_2^2}{\alpha_1^2}} \beta_1 \rho_1 + \sqrt{1 - \frac{\sin^2(\theta) \beta_1^2}{\alpha_1^2}} \beta_2 \rho_2 \right) + \\
& \quad \left. \sqrt{\cos^2(\theta)} \alpha_1^4 \alpha_2 \rho_2 \left(\sqrt{1 - \frac{\sin^2(\theta) \beta_2^2}{\alpha_1^2}} \beta_1 \rho_1 + \sqrt{1 - \frac{\sin^2(\theta) \beta_1^2}{\alpha_1^2}} \beta_2 \rho_2 \right) \right)
\end{aligned}$$

In terms of 7 parameters

In terms of 4 parameters ($\theta=0$)

$$\frac{\alpha_2 \rho_2 - \alpha_1 \rho_1}{\alpha_1 \rho_1 + \alpha_2 \rho_2}$$