

1

简单测试一下

$$\begin{aligned} f(Z) &= \frac{1}{2}(3 + Z_1 + Z_2 + Z_1 Z_2) \\ C_1 &= \frac{1}{2}(1 + Z_1) \\ C_2 &= \frac{1}{2}(1 + Z_2) \\ C_3 &= \frac{1}{2}(1 + Z_1 Z_2) \\ H_c &= \frac{1}{2}(3I + Z_1 + Z_2 + Z_1 Z_2) \end{aligned}$$

2

2个内部二次项

$$\begin{aligned} f(Z) &= \frac{1}{2}(6 \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3) \\ C_1 &= \frac{1}{2}(1 \pm Z_1) \\ C_2 &= \frac{1}{2}(1 \pm Z_2) \\ C_3 &= \frac{1}{2}(1 \pm Z_3) \\ C_4 &= \frac{1}{2}(1 \pm Z_4) \\ C_5 &= \frac{1}{2}(1 \pm Z_1 Z_2) \\ C_6 &= \frac{1}{2}(1 \pm Z_3 Z_4) \\ H_c &= \frac{1}{2}(6I \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4) \end{aligned}$$

3

2个内部二次项，1个外部二次型

$$\begin{aligned} f(Z) &= \frac{1}{2}(7 \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3) \\ C_1 &= \frac{1}{2}(1 \pm Z_1) \\ C_2 &= \frac{1}{2}(1 \pm Z_2) \end{aligned}$$

$$\begin{aligned}C_3 &= \frac{1}{2}(1 \pm Z_3) \\C_4 &= \frac{1}{2}(1 \pm Z_4) \\C_5 &= \frac{1}{2}(1 \pm Z_1 Z_2) \\C_6 &= \frac{1}{2}(1 \pm Z_3 Z_4) \\C_7 &= \frac{1}{2}(1 \pm Z_1 Z_3)\end{aligned}$$

$$H_c = \frac{1}{2}(7I \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3)$$

4

2个内部二次项，2个外部二次型

$$f(Z) = \frac{1}{2}(8 \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3 \pm Z_2 Z_4)$$

$$\begin{aligned}C_1 &= \frac{1}{2}(1 \pm Z_1) \\C_2 &= \frac{1}{2}(1 \pm Z_2) \\C_3 &= \frac{1}{2}(1 \pm Z_3) \\C_4 &= \frac{1}{2}(1 \pm Z_4) \\C_5 &= \frac{1}{2}(1 \pm Z_1 Z_2) \\C_6 &= \frac{1}{2}(1 \pm Z_3 Z_4) \\C_7 &= \frac{1}{2}(1 \pm Z_1 Z_3) \\C_8 &= \frac{1}{2}(1 \pm Z_2 Z_4)\end{aligned}$$

$$H_c = \frac{1}{2}(8I \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3 \pm Z_2 Z_4)$$

5

2个内部二次项，1个外部二次型 + 1个三次型

$$f(Z) = \frac{1}{2}(8 \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3 \pm Z_1 Z_2 Z_3)$$

$$\begin{aligned}C_1 &= \frac{1}{2}(1 \pm Z_1) \\C_2 &= \frac{1}{2}(1 \pm Z_2) \\C_3 &= \frac{1}{2}(1 \pm Z_3)\end{aligned}$$

$$\begin{aligned}
 C_4 &= \frac{1}{2}(1 \pm Z_4) \\
 C_5 &= \frac{1}{2}(1 \pm Z_1 Z_2) \\
 C_6 &= \frac{1}{2}(1 \pm Z_3 Z_4) \\
 C_7 &= \frac{1}{2}(1 \pm Z_1 Z_3) \\
 C_8 &= \frac{1}{2}(1 \pm Z_1 Z_2 Z_3) \\
 H_c &= \frac{1}{2}(8I \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3 \pm Z_1 Z_2 Z_3)
 \end{aligned}$$

6

2个内部二次项, 2个三次型

$$\begin{aligned}
 f(Z) &= \frac{1}{2}(8 \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3 Z_4 \pm Z_1 Z_2 Z_3) \\
 C_1 &= \frac{1}{2}(1 \pm Z_1) \\
 C_2 &= \frac{1}{2}(1 \pm Z_2) \\
 C_3 &= \frac{1}{2}(1 \pm Z_3) \\
 C_4 &= \frac{1}{2}(1 \pm Z_4) \\
 C_5 &= \frac{1}{2}(1 \pm Z_1 Z_2) \\
 C_6 &= \frac{1}{2}(1 \pm Z_3 Z_4) \\
 C_7 &= \frac{1}{2}(1 \pm Z_1 Z_3 Z_4) \\
 C_8 &= \frac{1}{2}(1 \pm Z_1 Z_2 Z_3) \\
 H_c &= \frac{1}{2}(8I \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3 Z_4 \pm Z_1 Z_2 Z_3)
 \end{aligned}$$

7

2个内部二次项, 1个外部二次型 + 1个四次型

$$\begin{aligned}
 f(Z) &= \frac{1}{2}(8 \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3 \pm Z_1 Z_2 Z_3 Z_4) \\
 C_1 &= \frac{1}{2}(1 \pm Z_1) \\
 C_2 &= \frac{1}{2}(1 \pm Z_2) \\
 C_3 &= \frac{1}{2}(1 \pm Z_3)
 \end{aligned}$$

$$\begin{aligned}
C_4 &= \frac{1}{2}(1 \pm Z_4) \\
C_5 &= \frac{1}{2}(1 \pm Z_1 Z_2) \\
C_6 &= \frac{1}{2}(1 \pm Z_3 Z_4) \\
C_7 &= \frac{1}{2}(1 \pm Z_1 Z_3) \\
C_8 &= \frac{1}{2}(1 \pm Z_1 Z_2 Z_3 Z_4) \\
H_c &= \frac{1}{2}(8I \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_3 \pm Z_1 Z_2 Z_3 Z_4)
\end{aligned}$$

8

2个内部二次项, 1个三次型 + 1个四次型

$$\begin{aligned}
f(Z) &= \frac{1}{2}(8 \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_2 Z_3 \pm Z_1 Z_2 Z_3 Z_4) \\
C_1 &= \frac{1}{2}(1 \pm Z_1) \\
C_2 &= \frac{1}{2}(1 \pm Z_2) \\
C_3 &= \frac{1}{2}(1 \pm Z_3) \\
C_4 &= \frac{1}{2}(1 \pm Z_4) \\
C_5 &= \frac{1}{2}(1 \pm Z_1 Z_2) \\
C_6 &= \frac{1}{2}(1 \pm Z_3 Z_4) \\
C_7 &= \frac{1}{2}(1 \pm Z_1 Z_2 Z_3) \\
C_8 &= \frac{1}{2}(1 \pm Z_1 Z_2 Z_3 Z_4) \\
H_c &= \frac{1}{2}(8I \pm Z_1 \pm Z_2 \pm Z_3 \pm Z_4 \pm Z_1 Z_2 \pm Z_3 Z_4 \pm Z_1 Z_2 Z_3 \pm Z_1 Z_2 Z_3 Z_4)
\end{aligned}$$