

$$\begin{aligned}
 |\mathbf{I} + \epsilon \mathbf{M}| &= \begin{vmatrix}
 1 + \epsilon M_{11} & \epsilon M_{21} & \epsilon M_{31} & \epsilon M_{41} & \epsilon M_{51} \\
 \epsilon M_{12} & 1 + \epsilon M_{22} & \epsilon M_{32} & \epsilon M_{42} & \epsilon M_{52} \\
 \epsilon M_{13} & \epsilon M_{23} & 1 + \epsilon M_{33} & \epsilon M_{43} & \epsilon M_{53} \\
 \epsilon M_{14} & \epsilon M_{24} & \epsilon M_{34} & 1 + \epsilon M_{44} & \epsilon M_{54} \\
 \epsilon M_{15} & \epsilon M_{25} & \epsilon M_{35} & \epsilon M_{45} & 1 + \epsilon M_{55}
 \end{vmatrix} \\
 &= (1 + \epsilon M_{11}) C_{11} - \epsilon M_{21} C_{21}
 \end{aligned}$$