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

$$
= \prod_i (1+\epsilon\,M_{ii}) + O(\epsilon^2)
$$