

$$\begin{pmatrix} x_1 \\ y_1 \\ z_1 \end{pmatrix} = \begin{pmatrix} x_0 \\ y_0 \\ z_0 \end{pmatrix} - \begin{pmatrix} \left(\frac{\partial f}{\partial x}\right)_{y,z} & \left(\frac{\partial f}{\partial y}\right)_{x,z} & \left(\frac{\partial f}{\partial z}\right)_{x,y} \\ \left(\frac{\partial g}{\partial x}\right)_{y,z} & \left(\frac{\partial g}{\partial y}\right)_{x,z} & \left(\frac{\partial g}{\partial z}\right)_{x,y} \\ \left(\frac{\partial h}{\partial x}\right)_{y,z} & \left(\frac{\partial h}{\partial y}\right)_{x,z} & \left(\frac{\partial h}{\partial z}\right)_{x,y} \end{pmatrix}^{-1} \begin{pmatrix} f(x_0, y_0, z_0) \\ g(x_0, y_0, z_0) \\ h(x_0, y_0, z_0) \end{pmatrix}$$