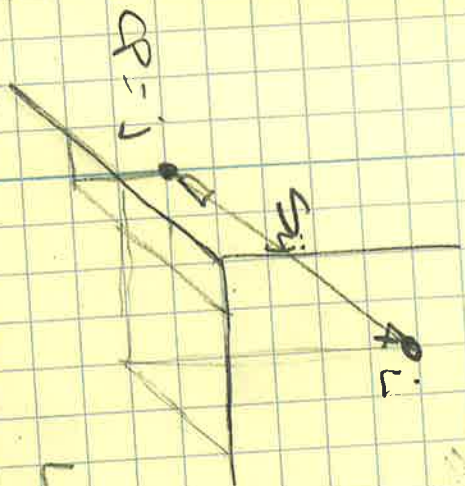


11/30/04



$$S_j = [(x_j - x_i)^2 + (y_j - y_i)^2 + (z_j - z_i)^2]^{1/2}$$

$$S_j = L_j C_i$$

$$L_j = \frac{1}{C_i} \left[\dots \right]^{1/2}$$

LINEARIZE

$$y = f(x_1, x_2) \Rightarrow y = y_0 + \left(\frac{\partial y}{\partial x_1} \right)_{x_0} \Delta x_1 + \left(\frac{\partial y}{\partial x_2} \right)_{x_0} \Delta x_2$$

$$z = e^{x_1} \quad x = 3e + 2e$$

$$y = 4e + 2e$$

$$\frac{\partial z}{\partial x} = z \times \frac{\partial x}{\partial x} = z \times 1 = z$$

$$z = y e^{x_1} \quad z = x e^{x_1} \quad y = y_0 + j_1 \Delta x_1 + j_2 \Delta x_2$$

$$x = 3 \quad \frac{\partial x}{\partial x} = 4 \quad y = y_0 + j_1 \Delta x_1 + j_2 \Delta x_2$$

$$\frac{\partial z}{\partial x} = y e^{x_1} = 3 + 4e^{x_1}$$

$$\left[\begin{matrix} \Delta x_1 \\ \Delta x_2 \end{matrix} \right]$$

$$\frac{\partial z}{\partial x_i} = \frac{1}{C_i} \left[\dots \right]^{1/2} z (x_j - x_i) (y_j - y_i)$$

$$\frac{\partial z}{\partial x_i} = \frac{1}{C_i} (y_j - y_i)$$

$$\frac{\partial z}{\partial x_i} = \frac{1}{C_i} (z_j - z_i)$$

$$= \frac{1}{C_i} \left[\dots \right]^{1/2} (x_j - x_i)$$

$$\frac{\partial z}{\partial x_i} = \frac{1}{C_i} \left[\dots \right]^{1/2} (x_j - x_i)$$

$$\frac{\partial z}{\partial x_i} = -\frac{1}{C_i} \left[\dots \right]^{1/2} = -\frac{1}{C_i}$$

$$= -\frac{1}{C_i}$$