

© Gradient Operator  $\nabla$  in  $(x, y, z)$  coordinates

$$\nabla_s = m \frac{\partial}{\partial x} \hat{i} + n \frac{\partial}{\partial y} \hat{j} \quad (3.5)$$

© Spherical coordinates  $(\lambda, \phi, r), (r \cos \phi, r, \lambda)$

$$\xi = \lambda, \quad \text{longitude} \quad (3.6)$$

$$\eta = \phi, \quad \text{latitude} \quad (3.7)$$

$$\frac{1}{m} = r \cos \phi \quad (3.8)$$

$$\frac{1}{n} = r \quad (3.9)$$

where "r" is the radius of the Earth.