

0.1 Directional derivative

We have a function, $f(\mathbf{x})$.

Given a vector v , we can identify by how much this scalar function changes as you move in that direction.

$$\nabla_v f(x) := \lim_{\delta \rightarrow 0} \frac{f(\mathbf{x} + \delta \mathbf{v}) - f(\mathbf{x})}{\delta}$$

The directional derivative is the same dimension as underlying field.

0.1.1 Other

Differentiation of scalar field, df , can be defined as a vector field where grad is 0. can differ with orientation, scale