

Concrete Example:

$$\text{Volume } V = [0, 1]^3$$

$$\text{Field } \mathbf{F} = \langle x, y, z \rangle$$

RHS (Volume):

$$\nabla \cdot \mathbf{F} = 1 + 1 + 1 = 3$$

$$\iiint_V 3 \, dV = 3$$

LHS (Flux):

$$\text{Faces at } 1: 1 + 1 + 1 = 3$$

$$\text{Faces at } 0: 0 + 0 + 0 = 0$$

$$\text{Total Flux} = 3$$

