$$C^\infty(\mathbb{R}^3) \ni f \longmapsto f \in \Omega^0(\mathbb{R}^3)$$

$$\downarrow \qquad\qquad\qquad\qquad\qquad\qquad\qquad \downarrow$$

$$\left(\frac{\partial f}{\partial x}, \frac{\partial f}{\partial y}, \frac{\partial f}{\partial z}\right) \longleftarrow\!\!\mid \; \mathrm{d}f = \frac{\partial f}{\partial x}\mathrm{d}x + \frac{\partial f}{\partial y}\mathrm{d}y + \frac{\partial f}{\partial z}\mathrm{d}z \in \Omega^1(\mathbb{R}^3)$$