



Definition

Suppose (X, \mathcal{F}) is a measurable space. A measure $\nu : \mathcal{F} \rightarrow \bar{\mathbf{R}}$ is said to have a density with respect to a measure $\mu : \mathcal{F} \rightarrow \bar{\mathbf{R}}$ if there exists a measurable function $f : X \rightarrow \mathbf{R}_+$

$$\nu(A) = \int_A f d\mu$$

In this case f is called a *density* of μ with respect to ν .

