



# Multivariate Real Densities

## 1 Why

TODO

## 2 Definition

A *multivariate density* or *joint density* is a function from  $n$ -dimensional real space to the real numbers which is nonnegative and and normalized. A real-valued function on  $n$ -dimensional real space is *normalized* if it integrates to 1.

## 3 Notation

$f : \mathbf{R}^d \rightarrow \mathbf{R}$  with  $f \geq 0$  and  $\int f = 1$  is a density.