



Random Variable Laws

1 Why

We name the image measures of real-valued random variables.

2 Definition

The **law** of a real-valued random variable, using the topological sigma algebra, is the image measure of the probability measure under the random variable

2.1 Notation

Let (X, \mathcal{A}) and (Y, \mathcal{B}) be two measurable spaces. Let $f : X \rightarrow Y$ be a random variable. Let $\mu : \mathcal{A} \rightarrow [0, \infty]$ be a probability measure. We denote the law of f by μ_f .