



Total Variation

1 Why

We want a norm on the space of measures.

2 Definition

The *total variation* of finite measure is the variation measure of the base set. We show below that the total variation is a norm on the vector space of finite measures.

2.1 Notation

Let R denote the set of real numbers. Let (X, \mathcal{A}) be a measurable space and $\mu : X \rightarrow R$ be a finite signed measure. We denote the total variation by $|\mu|$.

Let $|\mu|$ be the variation of μ . Then, $|\mu| = |\mu|(X)$.