Why

We want a norm on the space of measures.

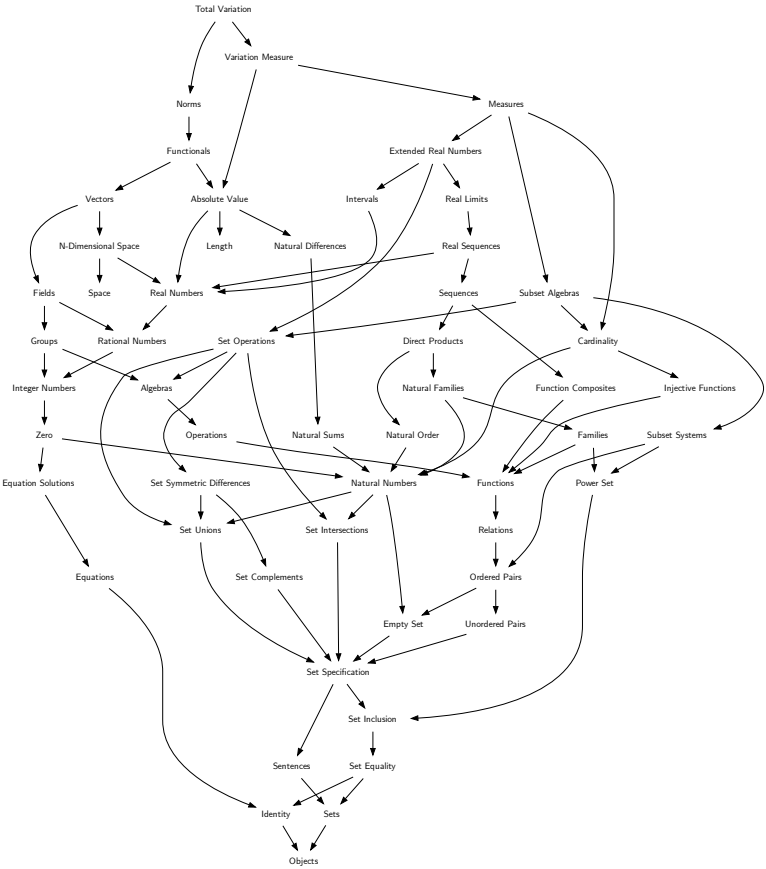
Definition

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.

Notation

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

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


Total Variation
Variation Measure
Norms
Measures
Functionals
Extended Real Numbers
Vectors
Absolute Value
Intervals
Real Limits
N-Dimensional Space
Length
Natural Differences
Real Sequences
Fields
Space
Real Numbers
Sequences
Subset Algebras
Groups
Rational Numbers
Set Operations
Direct Products
Cardinality
Integer Numbers
Algebras
Natural Families
Function Composites
Injective Functions
Zero
Operations
Natural Sums
Natural Order
Families
Subset Systems
Equation Solutions
Set Symmetric Differences
Natural Numbers
Functions
Power Set
Set Unions
Set Intersections
Relations
Equations
Set Complements
Ordered Pairs
Empty Set
Unordered Pairs
Set Specification
Set Inclusion
Sentences
Set Equality
Identity
Sets
Objects