Why

We want a norm on the space of measures.

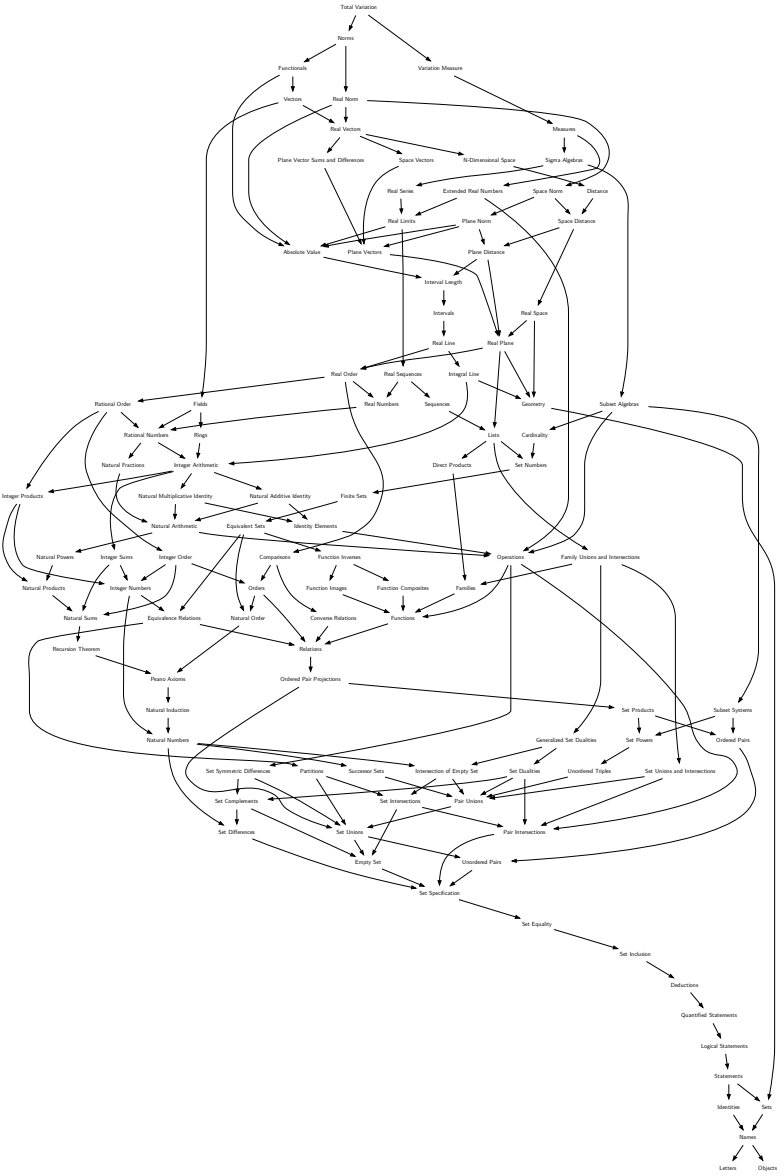
Definition

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 $(X, \mathcal{A})$ be a measurable space and $\mu : X \to \mathbf{R}$ 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
Norms
Functionals
Variation Measure
Vectors
Real Norm
Measures
Real Vectors
Plane Vector Sums and Differences
Space Vectors
N-Dimensional Space
Sigma Algebras
Real Series
Extended Real Numbers
Space Norm
Distance
Real Limits
Plane Norm
Space Distance
Absolute Value
Plane Vectors
Plane Distance
Interval Length
Intervals
Real Space
Real Line
Real Plane
Real Order
Real Sequences
Integral Line
Rational Order
Fields
Real Numbers
Sequences
Geometry
Subset Algebras
Rational Numbers
Rings
Lists
Cardinality
Natural Fractions
Integer Arithmetic
Direct Products
Set Numbers
Integer Products
Natural Multiplicative Identity
Natural Additive Identity
Finite Sets
Natural Arithmetic
Equivalent Sets
Identity Elements
Natural Powers
Integer Sums
Integer Order
Comparisons
Function Inverses
Operations
Family Unions and Intersections
Natural Products
Integer Numbers
Orders
Function Images
Function Composites
Families
Natural Sums
Equivalence Relations
Natural Order
Convene Relations
Functions
Recursion Theorem
Relations
Peano Axioms
Ordered Pair Projections
Natural Induction
Set Products
Subset Systems
Natural Numbers
Generalized Set Dualities
Set Powers
Ordered Pairs
Set Symmetric Differences
Partitions
Successor Sets
Intersection of Empty Set
Set Dualities
Unordered Triples
Set Unions and Intersections
Set Complements
Set Intersections
Pair Unions
Set Differences
Set Unions
Pair Intersections
Empty Set
Unordered Pairs
Set Specification
Set Equality
Set Inclusion
Deductions
Quantified Statements
Logical Statements
Statements
Identities
Sets
Names
Letters
Objects