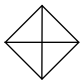
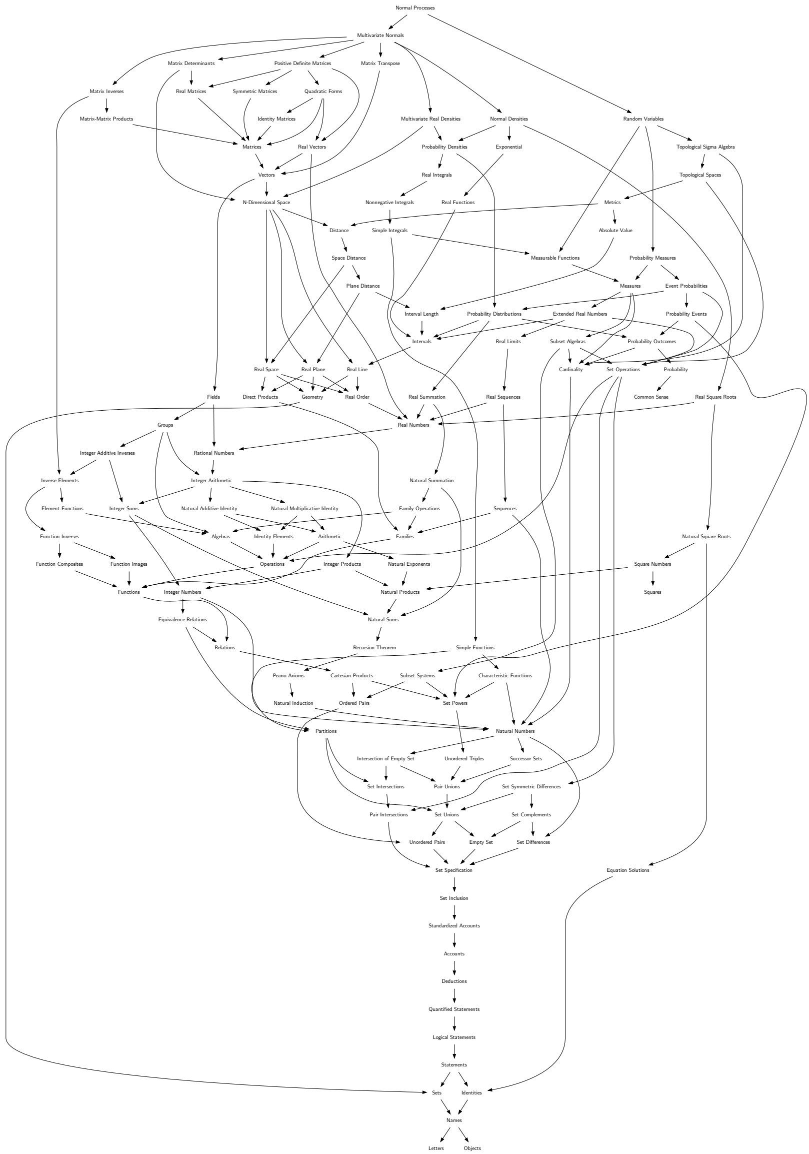


Why

Definition

Let $(\Omega, \mathcal{A}, \mathsf{P})$ be a probability space. Let I be an index set. A *normal process* (or *gaussian process*)[1] $x : I \to (\Omega \to \mathsf{R})$ on I is a family of real-valued random variables with the property that any subset of the range of this family has a multivariate normal density. There exists a $m : I \to \mathsf{R}$ and positive definite $k : I \times I \to \mathsf{R}$ with the property that if $J \subset I$, $|J| = d$, then $x_J \sim \mathcal{N}(m(J), k(J \times J))$. In other words, for each $i \in I$, $x_i : \Omega \to \mathsf{R}$ is a random variable And $x_J : \Omega \to \mathsf{R}^d$ is a Gaussian random variable. We call m is the *mean function* and k is the *covariance function*

[1]The choice of "normal" is a result of the Bourbaki project's convention to eschew historical names. Though here, as in Multivariate Normals the language of the project is nonstandard. The community would seem to prefer Gaussian.


Normal Processes
Multivariate Normals
Matrix Determinants
Positive Definite Matrices
Matrix Transpose
Matrix Inverses
Real Matrices
Symmetric Matrices
Quadratic Forms
Matrix-Matrix Products
Identity Matrices
Multivariate Real Densities
Normal Densities
Random Variables
Matrices
Real Vectors
Probability Densities
Exponential
Topological Sigma Algebra
Vectors
Real Integrals
Topological Spaces
N-Dimensional Space
Nonnegative Integrals
Real Functions
Metrics
Distance
Simple Integrals
Absolute Value
Space Distance
Measurable Functions
Probability Measures
Plane Distance
Measures
Event Probabilities
Interval Length
Probability Distributions
Extended Real Numbers
Probability Events
Intervals
Real Limits
Subset Algebras
Probability Outcomes
Real Space
Real Plane
Real Line
Cardinality
Set Operations
Probability
Fields
Direct Products
Geometry
Real Order
Real Summation
Real Sequences
Common Sense
Real Square Roots
Groups
Real Numbers
Integer Additive Inverses
Rational Numbers
Inverse Elements
Integer Arithmetic
Natural Summation
Element Functions
Integer Sums
Natural Additive Identity
Natural Multiplicative Identity
Family Operations
Sequences
Function Inverses
Algebras
Identity Elements
Arithmetic
Families
Natural Square Roots
Function Composites
Function Images
Operations
Integer Products
Natural Exponents
Square Numbers
Functions
Integer Numbers
Natural Products
Squares
Equivalence Relations
Natural Sums
Relations
Recursion Theorem
Simple Functions
Peano Axioms
Cartesian Products
Subset Systems
Characteristic Functions
Natural Induction
Ordered Pairs
Set Powers
Partitions
Natural Numbers
Intersection of Empty Set
Unordered Triples
Successor Sets
Set Intersections
Pair Unions
Set Symmetric Differences
Pair Intersections
Set Unions
Set Complements
Unordered Pairs
Empty Set
Set Differences
Set Specification
Equation Solutions
Set Inclusion
Standardized Accounts
Accounts
Deductions
Quantified Statements
Logical Statements
Statements
Sets
Identities
Names
Letters
Objects