Definition

The *differential cross entropy* of a second density with respect to a a first density is the integral of the second density against the negative log of the first density. Let R denote the set of real numbers. Let $f : R^n \to R$ and $g : R^n \to R$ be probability density functions. The differential cross entropy of f relative to g

$$- \int g \log f$$

We denote the differential cross entropy of f relative to g by $h(g, f)$.

Differential Cross Entropy

Differential Entropy

Multivariate Real Densities

Discrete Entropy

Probability Densities

Probability Distributions

Real Integrals

Nonnegative Integrals

N-Dimensional Space

Simple Integrals

Distance

Measurable Functions

Measures

Sigma Algebras

Length Measure

Extended Real Numbers

Real Series

Logarithm

Real Limits

Space Distance

Outcome Probabilities

Exponential Function

Simple Functions

Absolute Value

Plane Distance

Real Functions

Interval Length

Intervals

Real Space

Real Line

Real Plane

Real Summation

Real Sequences

Real Order

Integral Line

Natural Summation

Sequences

Real Numbers

Rational Order

Subset Algebras

Geometry

Lists

Rational Numbers

Cardinality

Natural Fractions

Direct Products

Integer Arithmetic

Set Number

Natural Additive Identity

Natural Multiplicative Identity

Integer Products

Finite Sets

Family Operations

Natural Arithmetic

Identity Elements

Family Unions and Intersections

Operations

Natural Powers

Integer Sums

Function Inverses

Integer Order

Comparisons

Families

Natural Products

Function Image

Function Composites

Integer Numbers

Orders

Natural Sums

Function

Natural Order

Equivalence Relations

Converse Relations

Recursion Theorem

Relations

Peano Axioms

Uncertain Outcomes

Ordered Pair Projections

Characteristic Functions

Natural Induction

Set Products

Subset Systems

Generalized Set Dualities

Natural Numbers

Set Powers

Ordered Pair

Set Unions and Intersections

Set Dualities

Intersection of Empty Set

Successor Sets

Unordered Triples

Set Symmetric Differences

Partitions

Pair Unions

Set Intersections

Set Complements

Pair Intersections

Set Differences

Set Unions

Empty Set

Unordered Pairs

Set Specification

Set Equality

Set Inclusion

Deductions

Quantified Statements

Logical Statements

Statements

Identities

Sets

Names

Letters

Objects