Why

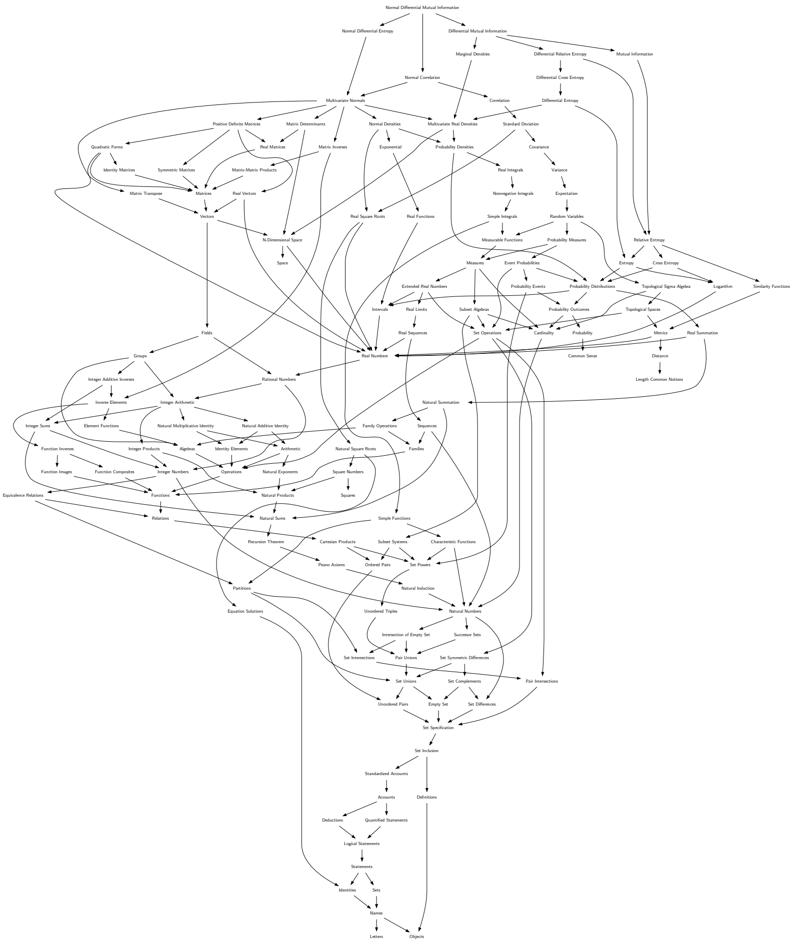
What is the differential mutual information between two components of a multivariate normal.

Result

Proposition **1.** *Let $g \sim \mathcal{N}(\mu, \Sigma)$. Then the mutual information between component i and component j is*

$$-\frac{1}{2}\ln(1-\rho_{ij}^2)$$

where ρ_{ij} is the correlation between components i and j.


Normal Differential Mutual Information
Normal Differential Entropy
Differential Mutual Information
Marginal Densities
Differential Relative Entropy
Mutual Information
Normal Correlation
Differential Cross Entropy
Multivariate Normals
Correlation
Differential Entropy
Positive Definite Matrices
Matrix Determinants
Normal Densities
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Inverse Elements
Integer Arithmetic
Natural Summation
Integer Sums
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Natural Multiplicative Identity
Natural Additive Identity
Family Operations
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Partitions
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Equation Solutions
Unordered Triples
Natural Numbers
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Successor Sets
Set Intersections
Pair Unions
Set Symmetric Differences
Set Unions
Set Complements
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Unordered Pairs
Empty Set
Set Differences
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Standardized Accounts
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Statements
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