

## NORMAL DIFFERENTIAL MUTUAL INFORMATION

## 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  $\rho_{ij}$  is the correlation between components i and j.

