Why

We name multivariate normal densities which factor according to a tree. These densities require tabulating fewer numbers.

Definition

A *tree multivariate normal* (or *tree normal*, *tree gaussian*) density is a multivariate normal density which factors according to a tree.

Fewer numbers

A multivariate normal on $\mathbf{R}^n$ requires tabulating n numbers for the mean and $n(n+1)/2$ numbers for the covariance matrix. If it factors according to a tree, we need only n numbers to specify the covariance (one for the one-variable marginal, and $n-1$ for the covariance of the two-variable conditionals).