



Tree Normals

1 Why

We name multivariate normal densities which factor according to a tree.

2 Definition

A *tree multivariate normal* or *tree normal* density is a multivariate normal density which factors according to a tree.

For a regular multivariate normal density on \mathbf{R}^n , we need to store $O(n^2)$ numbers (the covariance matrix). For a tree normal on \mathbf{R}^n we only need to store $O(n)$ real numbers.