

A method for two-stage search of vectors during voice compression where the codebook vector space is divided into subregions on the base of a binary tree, the search of a codebook vector nearest to the input by Euclidean metric is performed by formula:

$$d^{(E)}(x, p_i) = (x_i - p_{iM})^2,$$

where $x = (x_1, x_2, \dots, x_M)$ - input vector;

$p_i = (p_{i1}, p_{i2}, \dots, p_{iM})$ - i -st vector of dimension codebook;

n - number of vectors in the codebook.

During direct search all the distances to nodes are fixed, the distance to the sheet to which input vector pertains is computed, after that on the reverse phase of the search the distance is computed to those tree sheets for which the codebook vector is determined as the nearest to the input one. According to Euclidean metric a set of candidates for the nearest codebook vector is found.