

## عنوان مقاله:

An Improved N-dimensional NURBs-based Metamodel

## محل انتشار:

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## خلاصه مقاله:

Non uniform rational b-splines (NURBs) have proved to be very promising for metamodeling in engineering problems, because they have unique properties such as local modification scheme, strong convex hull property, and infinitely differentiability, etc. Since NURBs are defined by control points, knot vector, and weights associated with control points, the precision of NURBs is influenced by all of the parameters. In order to improve the accuracy and calculation efficiency, an enhanced method of building NURBs metamodel is presented. Some improvements are made in certain aspects, such as: improving the data normalization method and the calculating method of weight coefficient. Compared with the existing methods, this method can calculate the weight coefficient of each control point more quickly, because it avoids the inverse operation of correlation matrix, which may cause singular. Several classic numerical examples show that the presented method is effective for building approximate model with higher accuracy than existing NURBs metamodel.

## کلمات کلیدی:

, Non Uniform Rational B-splines , Metamodel , Weight Coefficient

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