

## **A Hybrid Parameterization Method for NURBS**

### **Abstract**

The problem of the parameterization of data points in NURBS curve/surface has been considered by amount of researchers. In this study, a new parameterization method considered as hybrid parameterization method is proposed. Like universal method, this method uses the property of "at each span index, there is exactly one maximum value of the rational B-spline basis function". By taking the maximum rational B-spline basis functions as initial values, the centripetal method is applied to generate the parameter values of hybrid parameterization. This approach inherits the advantages of universal and centripetal methods such as allowing having multiple knots value. The proposed method gives better object shaped relevant to the other methods.

The results on two simple data sets for both curves and surfaces show that this method is capable of generating smooth and fair object shape.