The definition of complex uncertainties in bspline surface by using normal type-2 triangular fuzzy number

ABSTRACT

In this paper, Normal Type-2 Triangular Fuzzy Number (NT2TFN) is used for defining complex uncertainties data to construct an approximation of B-spline surface. The type-2 fuzzy set is used to define the complex uncertainties due to type-1 fuzzy has limited efficiency to define the complex uncertainties problem.NT2TFN is based on the concept of Normal Type-2 Fuzzy Set Theory (NT2FST) and the Type-2 Fuzzy Number (T2FN). NT2TFNis used to define the complex uncertainties data before the three technique were implemented. These techniques include the fuzzification process by using alpha-cut operation with two determined value of alpha which is 0.5 and 0.8, the type-reduction process and the defuzzification process. Therefore, the finalize model of Normal Type-2Fuzzy B-spline Surface (NT2FBsS) for two determined value of alpha can be achieved and a new implementation to construct a geometry model by using NT2TFN on defining complex uncertainty data to fuse with Bspline surface is accomplished