Abstract

Here a special \((0, 2; 0, 3)\) lacunary interpolation scheme is considered where the data are prescribed unevenly at even and odd nodes of an arbitrarily defined partition of the unit interval \(I = [0,1]\).

The problem described as, we have the function values and second derivatives at odd nodes, whereas function values and the third derivatives at even nodes are known, we proved that there exists a unique quantic spline of continuity class \(C^2\) by solving the above mentioned interpolation scheme.

Furthermore, it is also proved that this spline function converges to the given function with the desired order of accuracy.

**Index Terms**

Computer Science

Information Sciences

**Keywords**

Lacunary interpolation, splines.