

1086-00-2869

Ryan A. Anderson* (rande43@students.kennesaw.edu), 2590 Mountain Brook Road, Canton, GA 30114. *Simultaneous Approximation of a Function and Its Derivative by Linear Splines.*

Linear splines, in particular interpolating splines, are used to approximate a function given on a discrete set of values of the function. Linear splines are widely used in many applications targeting geometric modeling of curves and surfaces as piecewise linear functions are generally easy to work with. The concept of linear splines have been extended to bilinear (linear in each variable) and further to polylinear splines with many results having been proved. In this talk, I will introduce the concept of spline interpolation and discuss new results on simultaneous approximation of a multivariate function (of certain smoothness) and its derivatives by linear splines as well as present some results on the error of approximation. The work was done under the supervision of Dr. Yuliya Babenko. (Received September 25, 2012)