

Department of Mathematics Seminar

Approximating Functions using Polynomial Interpolation

Yajun Yang

Associate Professor of Mathematics

3:15-4:00 PM

Thursday, December 3, 2015

Whitman Hall, Room 183 (CAMS)

Abstract : When we think about approximating a function, what typically comes to mind are Taylor polynomial approximations. However, using Taylor polynomials for approximating functions is not necessarily the most effective approach. Instead, we look at a different approach known as interpolation methods. We use the Lagrange interpolating polynomials to approximate various functions such as exponential and logarithmic functions, sinusoidal functions. We will examine the behavior of the error function associated with the approximations. Interactive spreadsheets will be used to investigate dynamically the way that the interpolating polynomial approximates the functions and to find the best polynomial to approximate a given function on a given interval.