



DEPARTMENT OF APPLIED MATHEMATICS

應 用 數 學 系

**The Hong Kong Polytechnic University
Department of Applied Mathematics**

Colloquium

**Solution of partial differential equations and interpolation with kernel
functions**

by

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Abstract

Kernel functions and radial basis functions are useful approximation tools, especially for global, smoothing, and a large choice of other approximations, in high dimensions, and especially for pointwise interpolation. The linear spaces which are generated by them stem from shifts of radially symmetric functions such as generalized multiquadrics or Gausskernels or Poissonkernels, or more generally symmetric conditionally positive kernels (that is, those that are elliptic on a space of low co-dimension, e.g. a low-dimensional polynomial space on which ellipticity is not satisfied). Their usefulness stems from their availability in any dimension and for arbitrary shifts (also, in particular, non-gridded) of the kernels that span the approximating vector-space. We use them in this talk both for interpolation, provide several new convergence results for certain parametrized radial basis functions, and apply them for PDEs as well.

Date : 27 April, 2017 (Thursday)

Time : 11:00a.m. – 12:00noon

Venue : TU801, The Hong Kong Polytechnic University

***** ALL ARE WELCOME *****