



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

Seminar

Computing $f(A)b$ – the action of a matrix function on a vector

by

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Abstract:

The matrix function $f(A)$ is defined if $f : \mathbb{C} \rightarrow \mathbb{C}$ is sufficiently smooth on the spectrum of A . If A is large and sparse, then $f(A)$ is usually a dense matrix, why it is only feasible to compute $f(A)b$ instead of $f(A)$, and this in an iterative fashion. The standard approach uses approximations based on the Arnoldi process.

In this talk we present a convergence analysis for the case that f is a Stieltjes function and A is hermitian and positive definite or positive real. Particular attention will be given to the case where for storage or time complexity reasons we have to restart the Arnoldi process.

Date: 17 August 2015 (Monday)
Time: 2:00p.m. – 3:00pm
Venue: TU801, The Hong Kong Polytechnic University

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