



香港城市大學  
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## DEPARTMENT OF MATHEMATICS

City University of Hong Kong

SEMINAR  
(online via zoom)

### Multiscale Data Analysis: Framelets, Manifolds and Graphs

by

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**Date: 22 July 2020 (Wednesday)**  
**Time: 3:30 – 4:30 pm**

#### ABSTRACT

While Big Data are high-volume, high-dimensional, and high complexity, they are typically concentrated on low-dimensional manifolds or can be represented by graphs, digraphs, etc. Sparsity is the key to the successful analysis of data in various forms. Multiscale representation systems provide efficient and sparse representation of various data sets. In this talk, we will discuss the characterizations, construction, and applications of framelets on manifolds and graphs. We shall demonstrate that tight framelets can be constructed on compact Riemannian manifolds or graphs, and fast algorithmic realizations exist for framelet transforms on manifolds and graphs. Explicit construction of tight framelets on the sphere and graphs as well as numerical examples will be shown.

Online registration:

<https://cityu.zoom.us/join/zoom/register/tJAqceqqrj8qGN3PH0PqngOZA2vt8rzdIPn>

*[Participants will receive zoom meeting ID and password by email after registration.]*

**Main Target Audience: Undergraduate, Master and PhD levels**