

FATRWA2017

Synopsis and Organizers

[Back To Home](#)**From Approximation Theory to Real World Applications**

Classical approximation theory, including polynomial approximation and splines etc., is a fundamental research area in applied mathematics. Development in approximation theory plays an important role in numerical solution of partial differential equations, image processing as well as in data sciences and many other disciplines. For example, the approximation and interpolation by splines, radial basis functions and shift-invariant spaces are widely applied for geometric modeling in aerospace and automobile industries; the approximation employing sparse multiscale systems such as wavelets and framelets has proven to be very powerful tools in image processing and multiscale-based scientific computing. Recently, approximation techniques using sparse recovery such as sparse approximation and compressed sensing are very popular in dealing with big data in high dimensions.

Approximation theory has also a strong connection with many research topics in pure mathematics. For example, box splines theory can be applied to study classical problems in combinatorics and to compute the Atiyah-Singer index. Another successful application is reported by Rong-qing Jia to solve the Stanley's conjecture about magic squares using box splines.

This workshop plans to bring active senior and young researchers worldwide in the field of approximation to exchange ideas on their current research, to discuss possible new strategies for addressing challenges in the field, and to investigate future directions. It will also provide an ideal platform for extensive interactions between experts from China and other countries in these areas.

Organizers

Name	University
Yau Shu Wong	University of Alberta, Canada
Bin Han	University of Alberta, Canada
Zhiqiang Xu	Chinese Academy of Sciences, China
Hong Jiang	Bell Lab, USA