Joint Colloquium Talk
Dept of Mathematics & IMS

Centroidal Voronoi Tessellations, Meshes and PDEs

by

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Abstract

Centroidal Voronoi Tessellation has become a useful tool in many applications ranging from image and data analysis to physics and biology. In this talk, we first introduce the concept of centroidal Voronoi tessellations and then discuss the relevant mathematical theory and related applications. We focus, in particular, on the optimal unstructured meshing and draw connections with various issues in the numerical solution of PDEs.

Brief Biography

Professor Qiang Du received his BS degree from the University of Science and Technology of China in 1983 and PhD from Carnegie-Mellon University in 1988. After first serving as a Dickerson instructor at the University of Chicago, he has held academic appointments at several universities and national labs including Michigan State, Iowa State, Carnegie Mellon, Hong Kong Science and Technology and Argonne. He is presently the Verne Willaman Professor of Mathematics and Materials Science at Penn State University. Dr.Du has published over 100 scientific papers and has been invited to speak at many research institutions and international conferences. He is also serving on editorial boards of several journals including SIAM Journal of Numerical Analysis, Discrete and Continuous Dynamic Systems, Applied Mathematics Research Exp., etc. Dr. Du received the Feng Kang prize in scientific computing in 2005, the faculty outreach and extension award at Iowa State University in 2000, the Frame faculty teaching award at Michigan State University in 1992, and the Eberly college of science medal at the Pennsylvania State University in 2006.