The Hong Kong Polytechnic University
Department of Applied Mathematics

Seminar
On

TV-based Models and Numerical Schemes for Geometry Processing

by

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Abstract

This talk is focused on shape optimization problems. In the first part, I will introduce a non-convex energy for shape optimization problems that is found in many applications. Then, I will reformulate this non-convex energy minimization problem for shapes into a convex minimization problem for functionals based on the Total Variation (TV) norm. This new TV-based minimization model is guaranteed to find the global minimum of the original shape problem. In the second part, I will discuss numerical schemes to compute a minimizer of the proposed shape optimization problem. I will present a very fast and accurate minimization scheme based on the Bregman iterative approach. In the last part, I will speak about an extension of the shape optimization problem to bent manifolds. This is a joint work with Tony Chan, Stanley Osher, Selim Esedoglu, and Tom Goldstein.

Date : **11 December, 2008 (Thursday)**

Time : **3:30 – 4:30 p.m.**

Venue : **Departmental Conference Room HJ610**
The Hong Kong Polytechnic University

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