

Variational Models for Image Processing and Fast Algorithms

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Date : 14 August 2009 (Friday)
Time : 3.30 pm – 4.30 pm
Venue: SPMS-Executive Classroom 1, MAS-03-06
School of Physical and Mathematical Sciences

In recent years, the interdisciplinary field of imaging science has been experiencing an explosive growth in research activities including more models being developed, more publications generated, and above all wider applications attempted. In this talk I shall first give an overview of the various imaging work carried out in our Liverpool group, some with collaborations with UCLA (T F Chan), CUHK (R H Chan) and Bergen/NTU (X C Tai) and several colleagues from other departments in Liverpool. Then I shall focus the recent work on a working multilevel algorithm for the total variation model of combined denoising and deblurring of images. Although the model by Osher et al is nearly 20 years old, no working nonlinear multilevel algorithms have worked before (for a general blurring kernel). The new work generalizes a multilevel denoising approach based on subspace optimization. This is joint work with R H Chan.

Speaker Biography

Prof Chen received his BSc in Applied Mathematics from Dalian University of Technology in 1983, MS and PhD in Numerical Analysis at Manchester and Plymouth (UK) respectively in 1987, 1990.

After 3 years' postdoctoral work at the University of Reading, he joined the University of Liverpool in 1993 as a lecturer. He is currently a professor at the University of Liverpool and the director of Research Centre for Mathematical Imaging Techniques. His areas include Numerical PDEs, Numerical Linear Algebra and various image processing applications.

Host: Prof. Wang Li-Lian, Division of Mathematical Sciences, School of Physical and Mathematical Sciences

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