962-68-595 **Tony F Chan** (chan@ipam.ucla.edu), Department of Mathematics, UCLA, Los Angeles, CA 90095, and **Jianhong (Jackie) Shen*** (jhshen@math.umn.edu), School of Mathematics, Vincent Hall 539, University of Minnesota, Minneapolis, MN 55455. *Models for non-texture inpaintings.* Preliminary report.

Inpainting refers to the general practice of artists for restoring ancient paintings. Specifically, to inpaint an image is to fill in image information on domains where the original image information is missing (due to factors like scratching and aging, for examples). Thus mathematically, inpainting belongs to the general category of inverse problems, of which, denoising and deblurring are more familiar examples. Digital inpainting via PDE's was first invented by Sapiro's group in the ECE department of University of Minnesota. In this talk, I will present two new mathematical models for non-texture inpaintings. These are models based on the PDE and variational methodologies. We shall discuss the principles leading to such models, their contribution to vision psychology, their connection to classical variational restoration models, as well as their numerical implementations. It is a joint work with Professor Tony Chan at UCLA. (Received September 15, 2000)