

GBM2001 Tutorials

Tuesday March 27, 2001

- 8:30–9:00 *Registration*
- 9:00–9:30 **Eitan Tadmor** (UCLA / University of Maryland)
Welcome
- 9:30–10:30 **Jean-Michel Morel** (Ecole Normale Supérieure, Cachan, France)
The Structure of Images - Consequences of Their Analysis
- 10:30–11:00 *Break*
- 11:00–12:00 **Jean-Michel Morel** (Ecole Normale Supérieure, Cachan, France)
Five ways to smooth a shape
- 12:00–2:00 *Lunch (on your own)*
- 2:00–3:00 **Stanley Osher** (IPAM)
Implicit Surfaces and the Level Set Method
- 3:00–3:30 *Break*
- 3:30–4:30 **Lawrence (Craig) Evans** (University of California at Berkeley)
Basic Theory for the Level Set Motion by Mean Curvature I
- 4:30–5:00 *Break*
- 5:00–12:00 *Dinner (Hosted by IPAM)*

Wednesday March 28, 2001

- 9:00–10:00 **Guillermo Sapiro** (University of Minnesota)
Implicit Surfaces: Motivation and Applications in Computer Graphics, Robotics and Computational Geometry
- 10:00–10:30 *Break*
- 10:30–11:30 **Jean-Michel Morel** (Ecole Normale Supérieure, Cachan, France)
The Matheron Formalism
- 11:30–2:00 *Lunch (on your own)*
- 2:00–3:00 **Jean-Michel Morel** (Ecole Normale Supérieure, Cachan, France)
Asymptotic Analysis of Morphological Filters and PDE's
- 3:00–3:30 *Break*

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3:30–4:30 **Yoshikazu Giga** (Hokkaido University)
Geometric Evolutions with Very Singular Diffusions

Thursday March 29, 2001

9:00–10:00 **Lawrence (Craig) Evans** (University of California at Berkeley)
Basic Theory for Level Set Motion by Mean Curvature II

10:00–10:30 *Break*

10:30–11:30 **Jean-Michel Morel** (Ecole Normale Supérieure, Cachan, France)
Gestalt Theory and Psychophysics

11:30–2:00 *Lunch (hosted by IPAM)*

2:00–3:00 **Jean-Michel Morel** (Ecole Normale Supérieure, Cachan, France)
Some Information Theoretical Principles for Image Analysis

3:00–3:30 *Break*

3:30–4:30 **Stanley Osher** (IPAM)
Level Set Methods and Numerical Technology

Friday March 30, 2001

9:00–10:00 **Stanley Osher** (IPAM)
Applications to Computer Graphics, Computer Vision and Image Processing I

10:00–10:30 *Break*

10:30–11:30 **Lawrence (Craig) Evans** (University of California at Berkeley)
Basic Theory for Level Set Motion by Mean Curvature III

Monday April 2, 2001

9:00–10:00 **Takis Souganidis** (University of Texas, Austin)
Front Propagation I: General Theory

10:00–10:30 *Break*

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- 10:30–11:30 **Olivier Faugeras** (INRIA Sophia Antipolis)
Variational Approaches for Image Segmentation: Application to Medical Images and Stereo
- 11:30–2:00 *Lunch (on your own)*
- 2:00–3:00 **Stanley Osher** (IPAM)
Applications to Computer Graphics, Computer Vision and Image Processing II

Tuesday April 3, 2001

- 9:00–10:00 **Takis Souganidis** (University of Texas, Austin)
Front Propagation II: Asymptotics of Reaction-Diffusion Equations
- 10:00–10:30 *Break*
- 10:30–11:30 **Takis Souganidis** (University of Texas, Austin)
Front Propagation III: Asymptotics of Reaction-Diffusion Equations
- 11:30–2:00 *Lunch (on your own)*
- 2:00–3:00 **Stanley Osher** (IPAM)
Applications to Physics, Engineering, Material Science I
- 3:00–3:30 *Getty Museum Excursion*

Wednesday April 4, 2001

- 9:00–10:00 **Takis Souganidis** (University of Texas, Austin)
Front Propagation IV: Hydrodynamic Limits of Particle Systems and Threshold Dynamics
- 10:00–10:30 *Break*
- 10:30–11:30 **Olivier Faugeras** (INRIA Sophia Antipolis)
Incorporating shape and intensity priors in image segmentation
- 11:30–2:00 *Lunch (on your own)*
- 2:00–3:00 **Russel Caflisch** (UCLA)
Interface Dynamics in Epitaxial Growth

Thursday April 5, 2001

- 9:00–10:00 **Olivier Faugeras** (INRIA Sophia Antipolis)
Variational Approaches to 2D and 3D Tracking in Sequences of Images
- 10:00–10:30 *Break*
- 10:30–11:30 **Takis Souganidis** (University of Texas, Austin)
Front Propagation V: Turbulent Combustion
- 11:30–2:00 *Lunch (on your own)*
- 2:00 *Lectures by GBM Core Participants 2:00 - 5:00*
- 2:00–2:30 **Richard Tsai** (Princeton University)
Fast and Accurate Methods for Computing the Distance Function and the Newton Solver
- 2:30–3:00 **Fabiana Leoni** (Universita' di Roma 1)
On the Convergence of the Bence-Merriman-Osher scheme
- 3:00–3:30 *Break*
- 3:30–4:00 **Li-Tien Cheng** (University of California at San Diego)
Level Set Based Method for Construction of Shapes Arising from the Minkowski Problem
- 4:00–4:30 **Zhilin Li** (North Carolina State University)
A level set method for an inverse problem in shape identification

Friday April 6, 2001

- 9:00–10:00 **Takis Souganidis** (University of Texas, Austin)
Front Propagation VI: Fronts in Random Environments and Fully Nonlinear Stochastic PDE
- 10:00–10:30 *Break*
- 10:30–11:30 **Stanley Osher** (IPAM)
Applications to Physics, Engineering, Material Science II
- 11:30–11:45 *Concluding Remarks*

