

# 2010 CNA Summer School

## New Vistas in Image Processing and PDEs

**Center for Nonlinear Analysis**  
Carnegie Mellon University, Pittsburgh, PA  
June 7–12, 2010



### Lecturers and Topics:

**Selim Esedoglu**, University of Michigan

- ▶ Algorithms for variational models involving interfaces in image processing

**Robert McCann**, University of Toronto

- ▶ Regularity of optimal mappings

**Stan Osher**, UCLA

- ▶ Nonlocal means, compressive sensing, L1 optimization, PDE based imaging, level set methods

**Martin Rumpf**, University of Bonn

- ▶ Variational Models in Shape Space and Links to Continuum Mechanics

**Giuseppe Savaré**, University of Pavia

- ▶ Applications of optimal transport to evolutionary PDEs

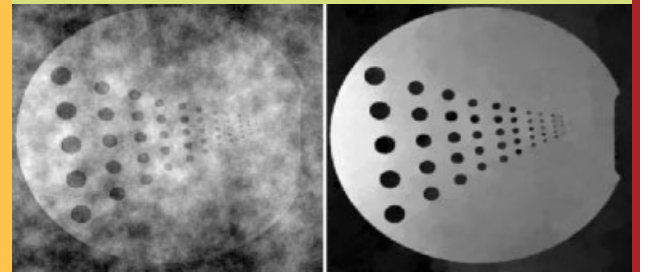
### Center for Nonlinear Analysis

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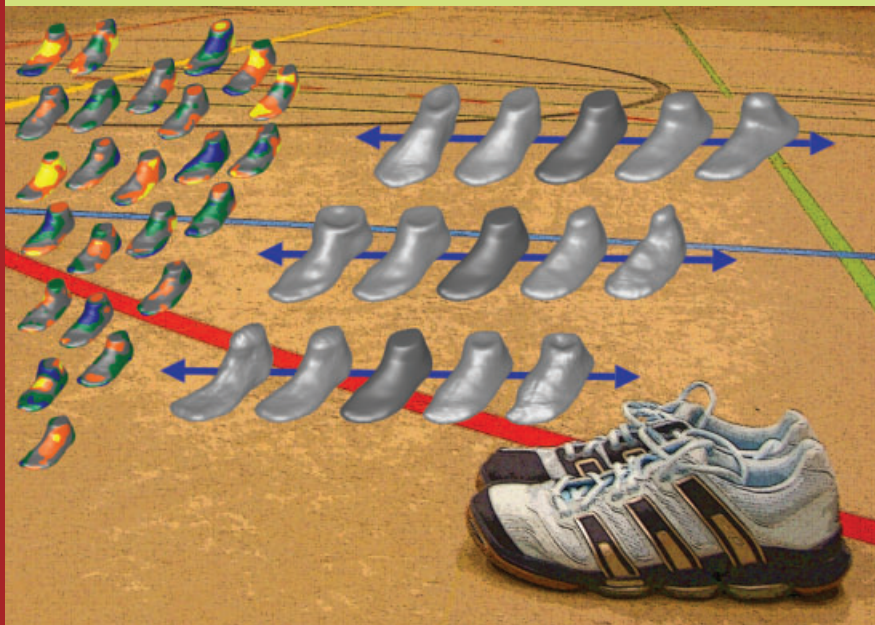
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Reconstruction of a magnetic resonance image using conventional method (left) and compressed sensing method (right). Provided by T. Goldstein and S. Osher.



Prepared by Benedikt Wirth with the algorithm from a paper by Benedikt Wirth, Leah Bar, Guillermo Sapiro, and Martin Rumpf.



From statistical shape analysis of feet towards optimizing sport shoes (M. Rumpf und B. Wirth in Kooperation mit adidas)

The mini-courses will be complemented by one-hour talks by leading researchers in related fields. The list includes:

- ▶ **Gary Miller**, Carnegie Mellon University
- ▶ **Allen Tannenbaum**, Georgia Institute of Technology

Graduate students and postdocs are encouraged to contribute a presentation for this conference. **The deadline for submission of contributed abstracts is April 1, 2010.**

Advanced undergraduate students, graduate students, and postdoctoral fellows are encouraged to apply for financial support. **The deadline for applications is April 15, 2010.**

**Organizers:** Irene Fonseca, Giovanni Leoni and Dejan Slepčev

<http://www.math.cmu.edu/cna/Summer10>

This conference is sponsored by the Department of Mathematical Sciences at Carnegie Mellon University and by the National Science Foundation.

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