



Institut für  
Angewandte Mathematik



Leibniz  
Universität  
Hannover

Institut für Angewandte Mathematik  
23.03.2011

## Oberseminar Analysis und Theoretische Physik

**Prof. Dr. Patrick Guidotti**  
University of California, Irvine

### "A new forward-backward regularization of the Perona-Malik equation"

**Abstract:**

The Perona-Malik equation (PME) is a forward-backward nonlinear diffusion which was proposed in the context of image processing as an image enhancement tool capable of preserving sharp features such as edges. To this day its mathematical nature has not been fully understood in spite of many an attempt by several researchers. After a brief historical overview of the mathematical results available for the equation and its many regularizations/relaxations, the talk will introduce and analyze a novel, rather natural, regularization which will shed light on the nature of PME. The regularization is quite mild in that PME is regularized by a family of forward-backward equations, the solutions of which are, however, better behaved.

**Dienstag, 17.05.2011, 15:15 Uhr, Raum g005  
Hauptgebäude der Universität**

Über Ihren Besuch würden sich freuen:

**Prof. Dr. Joachim Escher  
Prof. Dr. Bernhard Krötz  
Prof. Dr. Olaf Lechtenfeld  
Prof. Dr. Elmar Schrohe  
Prof. Dr. Christoph Walker**