



KATHOLIEKE UNIVERSITEIT LEUVEN

## **Statistics Seminar**

Joint organization by  
ORSTAT, Faculty of Business and Economics and the Statistics Research Group,  
Faculty of Science  
Leuven Statistics Research Center

**Prof. Dr. Natalie Neumeyer**

Department of Mathematics, University of Hamburg, Germany

**“Testing for monotonicity of nonparametric regression functions”**

**Thursday February 12, 2009  
12:00—13:00**

Location: Room HOG 03.101, Naamsestraat 69, Leuven.  
Supporting research project: GOA-project 2007/04

**Abstract:**

We explain how increasing regression functions can be estimated by increasing rearrangements of unconstrained nonparametric estimators.

Possibilities of applying such constrained estimators to test for monotonicity of regression functions and problems arising from the asymptotic expansion of the estimators are discussed.

We propose several new tests for monotonicity based on different empirical processes of residuals. The asymptotic distributions and small sample performances are presented.

(Joint work with Melanie Birke.)