

NORTH BRITISH FUNCTIONAL ANALYSIS SEMINAR

A meeting of the North British Functional Analysis Seminar will be held at the University of Edinburgh, Friday 3rd June 2.30pm till Saturday 4th June 12.30pm.

Prof. Franck Barthe

University Paul-Sabatier Toulouse, France

Hypercontractive Estimates

2.30pm and 4pm, tea/coffee at 3.30pm on Friday, 3 June 2011

Venue: David Hume Tower, Lecture Theatre B

Prof. Yuri Tomilov

Institute of Mathematics PAN, Warsaw, and Nicolaus Copernicus University, Torun

On Power Bounded Operators

10am and 11.30am, tea/coffee at 11am on Saturday, 4 June 2011

Venue: David Hume Tower, Lecture Theatre C

All interested are welcome to attend.

Dr. Joachim Zacharias, NBFAS Secretary, School of Mathematical Sciences
University of Nottingham, NG7 2RD
E-mail: Joachim.Zacharias@nottingham.ac.uk, Fax: 0115 9514951, Tel: 0115 9514943

NBFAS is registered with the Charity Commissioners. Reg. No: 313424.

Prof. Franck Barthe

University Paul-Sabatier Toulouse, France

Hypercontractive estimates

Abstract: We will be interested in variants of the celebrated hypercontractivity theorem of Nelson. For measures with supergaussian tails, the L_p scale is not adapted and a finer scale of Orlicz spaces is needed. We will also discuss the improving properties of the Ornstein-Uhlenbeck semi-group when the initial data is just assumed to be in L_1 .

Prof. Yuri Tomilov

Institute of Mathematics PAN, Warsaw, and Nicolaus Copernicus University, Torun

On power bounded operators

Abstract: In the first part of my talk I will explain how ergodic properties of power bounded operators on Hilbert spaces can be used to construct: 1) a power bounded operator which is not quasisimilar to a contraction, 2) a power bounded operator quasisimilar to a unitary operator which is not similar to a contraction.

In the second part of the talk, I will examine the structure of orbits of power bounded operators on Hilbert spaces. Recall that a vector is called weakly wandering for a bounded linear operator if its orbit under the operator contains a subsequence with mutually orthogonal elements. It appears that if a power bounded operator satisfies certain natural (and optimal) spectral assumptions then the set of its weakly wandering vectors is dense. This and more general results will be discussed thoroughly.