ABSTRACTS OF THE LECTURES

THE L^p-DISSIPATIVITY OF PARTIAL DIFFERENTIAL OPERATORS

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After giving some classical results concerning the dissipativity of linear operators on Banach spaces and the generation of contractive semigroups, the course will focus on the L^p-dissipativity of partial differential operators. Some recent results, obtained in joint papers with Vladimir Maz'ya, will be discussed. The main one is an algebraic necessary and sufficient condition for the L^p-dissipativity of the scalar operator $\nabla^t(A\nabla)$, where A is a matrix whose entries are complex measures and whose imaginary part is symmetric. We survey several other results connected to this condition and obtained mainly by V. Maz'ya and his co-authors. They concern operators with lower order terms, operators with constant complex coefficients, the angle of dissipativity, systems of partial differential operators, higher order operators.