Mathematics

LYAPUNOV TYPE NORMS FOR STRONG (h; k)-DICHOTOMY

Violeta CRAI

Abstract. The aim of this paper is to give some characterizations for a concept of dichotomy with different growth rates in terms of Lyapunov-type norms for evolution operators in Banach spaces.

Keywords and phrases: Evolution operator, (h; k)- dichotomy

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SOME NEW REMARKS ON THE LIE GROUP SO(3) × R³ × R³

Camelia PETRIŞOR, Remus-Daniel ENE, Camelia POP

Abstract. An optimal control problem on the Lie group $SO(3) \times \mathbf{R}^3 \times \mathbf{R}^3$ has been considered. Some stability problems were discussed and numerical integration is presented.

Keywords and phrases: Power series, Young's inequality

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4-SYSTOLIC CUBICAL COMPLEXES ARE COLLAPSIBLE

Ioana-Claudia LAZĂR

Abstract. We find a sufficient condition for the collapsibility of finite cubical complexes. Namely, we show that any finite 4-systolic cubical complex collapses to a point. A cubical complex is 4-systolic if it is simply connected, connected and locally 4-large. Local 4-largeness is a simple combinatorial condition deffined in terms of links in the complex

Keywords and phrases: cubical complex, 4-systolic, van Kampen diagram, edge-path, elementary operations, collapsibility

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FAIR ANSWER OF THE MARKET IN AN ALLOCATION OF RESOURCES GAME

Sorin LUGOJAN

Abstract. It is computed the most proper answer of the market as an outcome of a non-cooperative, competitive game of allocation of resources, by projecting the "point of demand" on the "conditional polytope".
Keywords and phrases: allocation of resources, fair/inuenced answer of the market, inuence of the consumers.

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ON UNIFORM POLYNOMIAL DICHOTOMY OF SKEW-EVOLUTION SEMIFLOWS ON THE HALF-LINE

Claudia Luminița MIHIȚ, Maria LĂPĂDAT

Abstract. The paper treats the concept of uniform polynomial dichotomy for skewevolution semiows on the half-line. Different characterizations for this property with respect to invariant projectors families are given.
Keywords and phrases: skew-evolution semiows, uniform polynomial dichotomy, uniform polynomial growth.

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ON A CLASS OF FORWARD-BACKWARD
STOCHASTIC DIFFERENTIAL EQUATIONS

Romeo NEGREA

Abstract. In this paper we shall establish a new theorem on the existence and uniqueness of the adapted solution to coupled forward-backward stochastic differential equations in McShane frame, under some weaker conditions than the Lipschitz one. The extension is based on the Athanassov non-lipschitz condition for ordinary differential equations. The existence of the solutions is proved follow a fixed point technique based on the Schauder's fixed point theorem.

Keywords and phrases: forward-backward stochastic differential equations, belated integrals, McShane integrals, non-Lipschitz conditions, adapted solutions, pathwise uniqueness, fixed point technique.

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