

NONUNIFORM ASYMPTOTIC PROPERTIES OF SKEW-EVOLUTION SEMIFLOWS WITH GROWTH RATES ON THE HALF-LINE

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The paper considers the concept of skew-evolution semiflow on the half-line, as a generalization of skew-product semiflow (treated in [1], [3], [4], [5]).

Significant examples of skew-evolution semiflows are given in [2], [6], to emphasize the importance of the notion.

The study of (nonuniform) exponential/polynomial stability, respectively (nonuniform) exponential/polynomial dichotomy is a prolific research area. Natural generalizations of this exponential and polynomial asymptotic behaviors are the concepts of nonuniform stability and nonuniform dichotomy with growth rates, approached in this paper.

We obtain necessary and sufficient integral conditions for nonuniform stability and nonuniform dichotomy with different growth rates. As consequences we give criterias for the nonuniform exponential stability, nonuniform polynomial stability, nonuniform exponential dichotomy and nonuniform polynomial dichotomy.

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