

Commentationes Mathematicae Universitatis Carolinae

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Abstract analysis of Korovkin approximation theory [Abstract
of thesis]

Commentationes Mathematicae Universitatis Carolinae, Vol. 30 (1989), No. 1,
194--195

Persistent URL: <http://dml.cz/dmlcz/106724>

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graphs except $K_{1,1} = K_2$ (cf. [8]) is mentioned here and extended to regular complete k -partite graphs. To the most interesting results of this part, the following two belong: 1) If C is a 1-perfect code in the second power of a graph G with n vertices then $\text{card } C \geq n$. It is proved here (cf. [10]) that G^2 contains a 1-perfect code of this minimum possible cardinality if and only if G is a self-complementary graph. 2) The isolated vertex and the path of length 3 are the only two trees such that their second powers contain 1-perfect codes.

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ABSTRACT ANALYSIS OF KOROVKIN APPROXIMATION THEORY

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The dissertation is devoted to abstract analysis of Korovkin approximation theory.

In the part presenting the results, the (abstract) sufficient conditions are established that a separable Banach lattice E contains the Korovkin set for E . They are obtained by the help of the "order universality" of $C[0, 1]$ (the Krejn's embedding theorem). Further, the qualities of the injective linear mapping are discussed, which maps the separable Banach lattice into $C[0, 1]$ and the elements from its cone (but only the elements from the cone) map on the positive elements of $C[0, 1]$. It is proved

that such mapping is a (linear) homeomorphism and a lattice homomorphism. It is also proved that the Korovkin set in $C(Y)$ and for $C(Y)$ (Y – the metric compact space) which contains an element 1_Y , must be the lattice generator for $C(Y)$. The explanation of the relationship between the classical Choquet boundary and the generalized Choquet boundary enabled to prove the coincidence of the notions “the Korovkin set in $C(Y)$ and for $C(Y)$ ” and “the Korovkin family in $C(Y)$ ”. This is true, if competent sets contain a function 1_Y and Y is a metric compact space. The conclusion of a dissertation deals with the finite Korovkin sets.

The thesis describes also the development of Korovkin approximation theory. The literature contains about 50 references.

THE PROPOSAL FOR THE MODERN TEACHING BULK DATA PROCESSING AT SECONDARY SCHOOL

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The main aim of this thesis has been modernizing teaching bulk data processing at secondary schools. To this end I have prepared a textbook for pupils of high schools specializing in programming containing teaching matter on database systems. Database systems which currently represent one of the best and most up-to-date ways of processing bulk data, have been part of University curriculum, but this subject matter has not yet been treated for the needs of secondary schools. To help teachers I have supplemented the textbook with didactic directions and examples with results. It has been experimentally tested in lessons (the range of the experiment was given by the contemporary curriculum using the time that is planned for modern programming elements).

In the text I have treated the history of database systems, the fundamental concepts of this region and two data models enabling the modelling of reality: a net model of the DBTG-CODASYL type and a relational data model. In both cases, first the fundamental theoretic knowledge is dealt with and then the actual samples of programming devices. For the net model of the DBTG-CODASYL type it is a simplified sample of the IDMS system and for a relational data model simplified samples of the ALPHA and SEQUEL languages and a language based on relational algebra. In all the languages mentioned I have reduced the subject matter to statements for creating data base, for updating, supplementing and deleting data and for retrieving data, for which the required criteria are fulfilled.

The textbook includes samples of solving very simple examples.

The whole exposition is chosen for secondary school students to gain a notion of the possibilities and advantages that database systems give in comparison with the classic way of dealing with bulk data.

The realized experiment has confirmed the intelligibility and suitability of the proposed text book and the change in high school curriculum suggested in 1985 confirmed its substantiality (database systems were inserted as a part of the chapter “Information systems”).