



UNIVERSITY OF NOVI SAD
FACULTY OF SCIENCES
DEPARTMENT OF MATHEMATICS
AND INFORMATICS



XVIII Conference on Applied Mathematics
PRIM 2009
Subotica, May 25–27, 2009

Book of Abstracts

Novi Sad, 2009.

XVIII Conference on Applied Mathematics "PRIM 2009"

Subotica, May 25-27, 2009

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Conference supported by

Ministry of Science and Technological Development, Republic of Serbia
Provincial Secretariat for Science and Technological Development, AP Vojvodina
Provincial Secretariat for Education, AP Vojvodina
Faculty of Sciences, University of Novi Sad

Tuesday 27.5.2009, 12:10-12:30

K. Nemeš

Applied Mathematics

THE IMPROVEMENT OF RIVER STRETCH CHARACTERIZATION FROM RELATIVE DIFFERENCES FUNCTIONS

The relative differences between functions (intercept and slope values) was obtained from linear regression of conductivity (Y) and cations and anions (X), i.e. specific conductivity. It is found that the concentration obtained for the zero difference has typical value when the exchange of season occurred.

Karolina Nemeš, Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad

Wednesday 27.5.2009, 11:00-11:20

R. Nikolić

Applied Mathematics

THE WEAK ASYMPTOTIC EQUIVALENCE AND THE GENERALIZED INVERSE

In this paper we discuss the relationship between the weak asymptotic equivalence relation and the generalized inverse in the class A of all nondecreasing and unbounded functions, defined and positive for enough large positive argument. In the main theorem, we prove a proper characterization of the functional class Oregularly varying functions (in the sense of Karamata) which are nondecreasing and unbounded. These results will be used for characterisation of a sequential class to which all strictly increasing Oregularly varying sequences belong, whose numerical functions are also Oregularly varying functions. Such results are of great importance in some processes in physics.

Dragan Đurčić, Rale Nikolić, Aleksandar Torgašev, Technical Faculty Čačak, University of Kragujevac

Wednesday 27.5.2009, 10:40-11:00

M. Obradović

Applied Mathematics

ABOUT PLANAR SECTIONS OF A TYPE OF EGG CURVE BASED CONOID

Starting from a type of conoid which is based on a cubic egg curve obtained by Hügelschäffers construction, it is considered a possible occurrence of related type of conoid, which would include conic curve as a part of its plane section. The solution is accomplished by constructively geometrical methods, supported by Rhinoceros software package.

Marija Obradović, Faculty of Civil Engineering, University of Belgrade

Maja Petrović, Faculty of Transport and Traffic Engineering, University of Belgrade

Branko Malešević, Faculty of Electrical Engineering, University of Belgrade

Tuesday 26.5.2009, 10:40-11:00

M. Petrović

Applied Mathematics

TRICYCLIC GRAPHS FOR WHICH THE LEAST EIGENVALUE IS MINIMUM

The spread of a graph is defined to be the difference between the largest eigenvalue and the least eigenvalue of the adjacency matrix of the graph. In this paper we determine the unique graph with minimal least eigenvalue among all connected tricyclic graphs of order n . Also, we determine unique graph with maximal spread in this class for $n \geq 52$.

Miroslav Petrović, Bojana Borovičanin, Tatjana Aleksić, Faculty of Science, University of Kragujevac

Wednesday 27.5.2009, 09:20-09:40

Ž. Popović

Applied Mathematics

CONGRUENCES AND SEMILATTICES OF ARCHIMEDEAN SEMIGROUPS

By \mathbf{Z}^+ we denote the set of all positive integers. By S^1 we denote a semigroup S with identity 1. Let a and b be elements of a semigroup S . Then $a|b \iff b \in S^1 a S^1$, and $a \rightarrow b \iff (\exists n \in \mathbf{Z}^+) a|b^n$. Using previous relations we will define the following relation $\rightarrow = \rightarrow \cap (\rightarrow)^{-1}$. A semigroup S is *Archimedean* if $a \rightarrow b$, for all $a, b \in S$. A congruence relation ρ on a semigroup S is called a band congruence if S/ρ is a band.

M. S. Putcha, in 1973, proved that a semigroup S is a semilattice of Archimedean semigroups if and only if $a|b \implies (\exists n \in \mathbf{Z}^+) a^2|b^n$. P. Protić, in 1991, and S. Bogdanović and M. Ćirić, in 1992 and 1993, have given some equivalent statements for Putcha's theorem.

In this paper, for $m, n \in \mathbf{Z}^+$, we define a relation $\rho_{(m,n)}$ by

$$(a, b) \in \rho_{(m,n)} \iff (\forall x \in S^m)(\forall y \in S^n) xay \rightarrow xby,$$

which is a congruence relation on an arbitrary semigroup S . Using the congruence relation $\rho_{(m,n)}$ we will give some new characterizations of semilattice of Archimedean semigroups.

Stojan Bogdanović, Žarko Popović, Faculty of Economics, University of Niš