INTUITIONISTIC FUZZY BCC–IDEALS OF BCC–ALGEBRAS
Wiesław A. Dudek, Yung Bae Jun

We consider the intuitionistic fuzzification of the concept of BCC-subalgebras and BCC-ideals in BCC-algebras, and investigate some properties of such ideals. We also introduce the notion of equivalence relations on the family of all intuitionistic fuzzy BCC-ideals of a BCC-algebra and investigate some related properties.

PIANI BOOLEANI, II
Sandro Rajola, Maria Scafati Tallini

This paper is the continuation of *Piani booleani* I [3]. Here we study the conics and explain their properties in a boolean plane.

NORMAL FORM OF HYPEROPERATIONS AND EXISTENCE OF SHEFFER HYPEROPERATIONS
Hajime Machida

A *hyperoperation* on a finite set A is a mapping from A^n ($n > 0$) into the set of non-empty subsets of A, and a *hyperclone* on A is a (hyper-)composition-closed subset of hyperoperations containing all selectors. In this paper we present the following properties about hyperoperations: (i) Existence of a normal form for hyperoperations, (ii) existence of ternary and quaternary Sheffer hyperoperations and (iii) non-existence of a binary Sheffer hyperoperation on a two-element set.

THE CARDINALITY AND REPRESENTATION OF THE FUZZY POWER RING
Zhang Chengyi, Ma Shengquan, Fu Haiyan

Yao Bingxue [4] defined fuzzy power ring as a generalization of HX-ring introduced by Li Hongxing [3]. In this paper, it is pointed that this kind of fuzzy power ring is not the Zadehs' fuzzy subring, and it can be represented by a classical ring. The cardinality of the element in an fuzzy power ring and the homomorphic properties of the fuzzy power ring are discussed. For example, a regular representation of a fuzzy power ring is given.

INVARIANT MINIMAL SURFACES IN THE REAL SPECIAL LINEAR GROUP OF DEGREE 2
Dedicated to professor Koichi Ogiue on his 60th birthday
Jun-ichi Inoguchi

Invariant minimal surfaces in the real special linear group $SL_2\mathbf{R}$ with canonical Riemannian and Lorentzian metrics are studied. Constant mean curvature surfaces with vertically harmonic Gauss map are classified.

EXPLICIT EXPRESSION OF KONTSEVICH STAR PRODUCT AND RATIONALITY OF WEIGHTS
Nabiha Ben Amar

We give an explicit expression of the Kontsevich star product on the dual of any Lie algebra equipped with linear Poisson bracket. We conclude the rationality of all weights of possible graphs in this case.

EXISTENCE AND UNIQUENESS OF SOLUTION OF UNILATERAL PROBLEMS WITH L^1-DATA IN ORLICZ SPACES
A. Benkirane, J. Bennouna

In this paper we study in the framework of Orlicz Sobolev Space, the existence and uniqueness of the unilateral problems associated to the equation

$$-\operatorname{div} a(x, \nabla u) = f,$$

where $f \in L^1(\Omega)$.

HOMOTHETIC CHANGES OF VARIABLES AND THE UNIQUE EXTENSION PROBLEM IN CALCULUS OF VARIATIONS
U. De Maio, L. Faella, C. Perugia

no abstract

ANALYTIC MONOIDS VERSUS ABSTRACT MONOIDS
Gabriele Ricci

Analytic monoids are more elementary than abstract monoids, yet equivalent to the latter. They are able to characterize the monoids of universal (square) matrices, the superassociative systems with selectors of K. Menger, the (free) algebras with bases through their concrete endomorphism monoids. Though they are not equationally defined, they are more relevant to equational varieties than abstract monoids and they lodge a new kind of equations, wider than the one of Universal Algebra.

UNIQUENESS OF $AG_3(4, 2)$
Andrea Caggegi

In this paper we show that the geometric design $AG_3(4, 2)$ is up to isomorphism the only $3 - (16, 8, 3)$ design in which any four distinct points are contained in at least one common block.

nX–COMPLEMENTARY GENERATIONS OF THE SPORADIC GROUP HE
M.R. Darafsheh, G.A. Moghani

A finite group G with conjugacy class nX is said to be nX–complementary generated if, given an arbitrary $x \in G - \{1\}$, there is a $y \in nX$ such that $G = \langle x, y \rangle$. The nX–complementary generations of the simple groups was first introduced by Woldar in [8] to show that every sporadic simple group is pX–complementary generated for a suitable prime p. In this paper we investigate all the nX–complementary generations of Held group He and prove that the group He is nX–complementary generated if and only if $nX = 3B$ or $n \geq 4$.

THE STRUCTURE AND CONSTRUCTION OF POWER RINGS
Yao Bingxue

In order to improve the results of HX ring, the concept of power ring is introduced which can be considered as a generalization of ordinary quotient ring. Using the concept of power ring, a new approach to study upgrade of algebraic structure of ring is given. Thus, we can see clearly the evolutions from power ring to quotient ring.

A NOTE ON CENTRALIZERS OF UNIPOTENT ELEMENTS
Cédric Bonnafé

no abstract

SOLVING FUZZY NUMBER LINEAR PROGRAMMING PROBLEM BY LEXICOGRAPHIC RANKING FUNCTION
H. Mishmast Nehi, H.R. Maleki, M. Mashinchi

In the formulation of realistic linear programming problems, set of fuzzy numbers may appear as decision parameters. There are some approaches for solving these problems. The most commonly used method is to apply a ranking function to transform the problem into a crisp linear programming one. Unfortunately all these methods when there exist alternative optimal solutions, usually with different fuzzy value of the objective function for these solutions, can not specify a clear approach for choosing a solution. In this paper first, we introduce the lexicographic ranking function to order fuzzy numbers. Then, by using the concepts of value, ambiguity and fuzziness for a fuzzy number we apply the lexicographic ranking function method to remove the above shortcoming in solving fuzzy number linear programming problems.

ORDERED UNIFORM SPACES AND VARIATIONAL PROBLEMS
A.B. Németh

In practically all Ekeland type variational problems we have to do with an "induced" order relation in some metric space or uniform space. The effective minimization takes place with respect to this order relation. Hence a natural approach is to start with ordered uniform spaces and to develop here a minimization theory. Then various Ekeland-type problems differ in the way in which order relation is induced in the source uniform space by functions with values in spaces with particular structures (ordered topological vector spaces, ordered topological Abelian groups, product of such spaces). This approach is the aim of the present note. The obtained theory contains the most general results in this regard as that in [2] and [6].

A CLASS OF FOUR-ISOMETRIES ON FUNCTION SPACES
K. Hedayatian

A bounded linear operator T on a Hilbert space $\mathcal{H}$ is called a 4-isometry if $T^{*^4}T^4 - 4T^{*^3}T^3 + 6T^{*^2}T^2 - 4T^*T + I = 0$. In this paper corresponding to every finite positive Borel measure μ on the unit circle we introduce a Hilbert space of analytic functions on the unit disc such that the operator of multiplication by z on it is a 4-isometry.

HYPERGROUPOIDS OBTAINED FROM GROUPOIDS WITH BINARY RELATIONS
Stefanos Spartalis

One associates a partial hypergroupoid $(H, *_R)$ to every groupoid $(H, \cdot)$ equipped with a binary relation R. Conditions are found for $(H, *_R)$ to be a H_V-semigroup, semihypergroup or a H_V-group. Homomorphisms and isomorphisms of hypergroupoids obtained from groupoids with binary relations are also investigated. All hypergroupoids $(H, *_R)$ constructed from groupoids with cardinality 2 are determined.

THE GENERAL STRICT TOPOLOGY IN LOCALLY CONVEX MODULES OVER LOCALLY CONVEX ALGEBRAS – I
K.V. Shantha

Let (X, τ) be a locally convex left A-module over a locally convex algebra with a two sided bounded approximate identity. We introduce the strict topology on X induced by A and generalise the work of Sentilles and Taylor of strict topology on Banach left A-modules over Banach algebras with two sided bounded approximate identity. Besides establishing the basic properties of the strict topology, it is shown that under certain conditions strictly bounded sets and τ-bounded sets in X coincide and the multiplier module $\mathrm{Hom}_A(A, X_e)$ with strict topology is a complete locally convex space and strictly bounded sets coincide with bounded sets in $\mathrm{Hom}_A(A, X_e)$ with the topology of bounded convergence.

HYPERGROUPS DETERMINED BY ORDERINGS WITH REGULAR ENDOMORPHISM MONOIDS
Jan Chvalina, Jiří Moučka

Using results of A.Ja. Aizenshtat, M.E. Adams and M. Gould concerning posets with regular semigroups of order-preserving isotone selfmaps there are characterized hypergroups in the sense of Marty with regular semigroups of endomorphisms.

ON COMPLEMENTED SUBSPACES OF DUAL BANACH SPACES
Parviz Azimi

X and Y are Banach spaces, $i : X \to Y$ and $j : X^* \to Y^*$ are bounded linear maps such that for each $x \in X$ and $x^* \in X^*$, $x^*(x) = (jx^*)(ix)$. Then i and j are isomorphism and $j(X^*)$ is complemented in Y^*. Examples are given of Banach sequence spaces contain l_p hereditarily complemented.