

CONTENTS

**Abdelkarim Boua and Lahcen Taoufiq**

SOME ALGEBRAIC RESULTS INVOLVING DERIVATIONS IN 3-PRIME  
NEAR-RINGS 147-160

**Abstract:** In this paper, we study the behavior of derivations satisfying certain local differential properties involving semigroup ideals of left near-rings. In particular our purpose is to generalize some results on commutativity of rings.

**Venkatesan Govindaraj and Raju K. George**

CONTROLLABILITY OF ITERATIVE FRACTIONAL INTEGRO-DIFFERENTIAL  
SYSTEMS IN BANACH SPACES 161-187

**Abstract:** In this paper, we consider an iterative fractional integro-differential system in the sense of Caputo fractional derivative of orders lying between  $(0, 1]$  and  $(1, 2]$  in Banach spaces. Sufficient conditions for controllability have been established by using Banach contraction principle. Examples are included to illustrate the theoretical results.

**Eduardo Pascali**

SOME REMARKS ON CONTRACTIVE MAPS 189-192

**Abstract:** We give two particular properties for subsets of metric spaces that seem not well considered otherwise for the study of contractive mappings. The first property ensures the localization of the solutions of the following problem  $\max \{d(x, g(x)) | x \in K\}$  where

$K \subset X$  is a non-void subset with its interior  $K^\circ \neq \emptyset$ . The other property gives a result on fixed points for contractive mappings.

**Sahil Gupta and T. D. Narang**

SEMICONINUITY OF THE METRIC PROJECTION AND RELATED  
MAPS

193-208

**Abstract:** The semicontinuity of the metric projection and related maps have played a key role in discussing the structure of the approximating set and geometry of the space. In this paper, we discuss the upper semicontinuity and lower semicontinuity of the metric projection and related maps when the underlying spaces are metric linear spaces and metric spaces. The results proved in this paper generalize and extend several known results on the subject.

**A. Sarkar, Amit Sil and Dipankar Biswas**

A STUDY ON THREE-DIMENSIONAL QUASI-SASAKIAN MANIFOLDS 209-225

**Abstract:** One of the objects of the present paper is to show the relation between the  $\phi$ -sectional curvature and  $\phi$ -symmetry of a three-dimensional quasi-Sasakian manifold. Examples of three-dimensional quasi-Sasakian manifolds of constant  $\phi$ -sectional curvature are given. Existence of a totally geodesic hypersurface of a three-dimensional quasi-Sasakian manifold is established and it is shown that such a totally geodesic hypersurface is not invariant.

**Hassan Al-Zoubi, Stylianos Stamatakis, Waseem Al-Mashaleh  
and Mohammed Awadallah**

TRANSLATION SURFACES OF COORDINATE FINITE TYPE

227-241

**Abstract:** We consider translation surfaces in the 3-dimensional Euclidean space which are of coordinate finite type with respect to the third fundamental form  $III$ , i.e. their position vector  $\mathbf{x}$  satisfies

the relation  $\Delta^{III}\mathbf{x} = \Lambda\mathbf{x}$ , where  $\Lambda$  is a square matrix of order 3. We show that Sherk's minimal surface is the only translation surface satisfying  $\Delta^{III}\mathbf{x} = \Lambda\mathbf{x}$ .

### C. Ramesha and T. Mohandas

CONVOLUTION PROPERTIES OF A NEW SUBCLASS OF THE CLASS  
OF CLOSE-TO-CONVEX FUNCTIONS

243-254

**Abstract:** In this paper, we introduce and study the subordination and convolution properties of the class  $J_\alpha$ , a subclass of the class of close-to-convex functions. The coefficient bounds and the effect of certain integral operators on  $J_\alpha$  are discussed. It is derived that the class  $J_\alpha$  is closed under convolution.

### A. Jeeva, R. Selvakumar and M. Nalliah

FAMILIES OF GREATER  $b$ -CHROMATIC GRAPHS

255-261

**Abstract:** Given a graph  $G$ ,  $b$ -coloring is a proper  $k$ -coloring of  $G$  in which every color class has at least one vertex that has a neighbour in each of the other color classes. Such a vertex is called a  $b$ -vertex. A set  $S_0 \subseteq V$  is called a  $b$ -system if all the vertices in  $S_0$  are  $b$ -vertices that belong to different color classes. The  $b$ -chromatic number is the largest integer  $k$  such that  $G$  admits a  $b$ -coloring with  $k$  colors. A greater  $b$ -chromatic graph is a graph  $G$  such that the  $b$ -chromatic number of  $G$  is greater than the  $b$ -chromatic number of every graph obtained from  $G$  by identifying two adjacent vertices, denoted by  $b_h$ -chromatic. In this paper, for any given graph  $G$  we constructed the graphs  $G^*$ ,  $G^+$  and  $G^{*+}$ . It is proved that  $G^*$ ,  $G^+$  are  $b_h$ -chromatic graph but  $G^{*+}$  is not  $b_h$ -chromatic graph. Further, we proved that the  $b$ -chromatic number of  $G^{*+}$  is neither equal nor less than the  $b$ -chromatic number of every graph obtained from  $G^{*+}$  by identifying any two adjacent vertices.

**Tanusree Choudhury**

KOMLÓS' THEOREM AND FATOU'S LEMMA IN  $E(X)$

263-281

**Abstract:** Here we study Komlós' theorem and an approximate version of Fatou's lemma in the Köthe-Bochner space  $E(X)$ . We also prove some convergence theorems on  $E(X)$

\*\*\*\*\*