

Journal of Interdisciplinary Mathematics

Volume 27, Number 8, December 2024

Special Issue on

Neoteric Advancements in Analysis and Applied Mathematics

Guest Editors

Surjeet Singh Chauhan

Harish Nagar

Praveen Ailawalia

Naveen Mani

Rajesh Kumar Saini

Rahul Shukla

Published by :



Guest Editors

Surjeet Singh Chauhan (Gonder)

University Institute of Sciences
Chandigarh University
Gharuan 140301
Mohali, Punjab
India
E-mail: director.uis@cumail.in

Harish Nagar

Department of Mathematics
Chandigarh University
Gharuan 140301
Mohali, Punjab
India
E-mail: ssociatedirector.mathematics@cumail.in

Praveen Ailawalia

Department of Mathematics
University Institute of Sciences
Chandigarh University
Gharuan 140301
Mohali, Punjab
India
E-mail: praveen.e14523@cumail.in

Naveen Mani

Department of Mathematics
Chandigarh University
Gharuan 140301
Mohali, Punjab
India
E-mail: researchcoordinator.maths@cumail.in

Rajesh Kumar Saini

Department of Mathematical Sciences and Computer Applications
Bundelkhand University
Jhansi 284128
Uttar Pradesh
India
E-mail: prof.rksaini@bujhansi.ac.in

Rahul Shukla

Department of Mathematical Sciences & Computing
Walter Sisulu University
Mthatha Campus 5117
South Africa
E-mail: rshukla@wsu.ac.za

FOREWORD

The theme of this special issue is “Neoteric Advancements in Analysis and Applied Mathematics”. Its goal is to look at new developments in fractional calculus, summability theory, fixed point theory, and special functions, as well as how they can be used to make the future more sustainable. This issue is mainly about discussing new ways to combine fractional integration formulas with special functions, using summability theory to study how things converge in neutrosophic normed linear spaces, creating new hybrid fixed point iterative processes, making fixed point theorems more general, and a lot of other important topics. By discussing these mathematical advancements, we hope to highlight their applicability and possible benefits to a variety of present-day challenges.

The issue contains the extended version of the selected papers submitted to the International Conference on *Neoteric Advancements in Analysis and Applied Mathematics* (NA3M-2023) (<https://www.cuchd.in/icna3m/>). The conference was conducted in the offline mode on 18 -19 December 2023, at Department of Mathematics, University Institute of Sciences, Chandigarh University, Gharuan, Punjab – 140413, India. We received more than 200 research papers out of which 26 papers have been finally selected for publication.

The guest editors would like to convey their appreciation to the authors for contributing their significant research for inclusion in the special issue of the *Journal of Interdisciplinary Mathematics*, published by Taru Publications, New Delhi. The Guest Editors extend their gratitude to Prof. B.K. Dass, Chief Editor, for his help in the publication of this special issue.

Guest Editors :

Surjeet Singh Chauhan

Harish Nagar

Praveen Ailawalia

Naveen Mani

Rajesh Kumar Saini

Rahul Shukla

Journal of Interdisciplinary Mathematics

Volume 27, Number 8, December 2024

Special Issue on

Neoteric Advancements in Analysis and Applied Mathematics

CONTENTS

N. K. JHA, S. KUMAR AND J. KAUR Some characterizations on screen generic lightlike submanifolds	1729–1734
MUSKAN AND S. S. CHAUHAN A theoretical approach to find the solution of population based mathematical model	1735–1740
L. D’COSTA AND N. MENARIA Fractional calculus of extended k-generalized Mittag-Leffler function and its properties	1741–1748
S. KAPILA, H. NAGAR AND S. SHARMA MSM fractional calculus operator pertaining to generalized modified Bessel function of the second type	1749–1755
S. SHARMA, A. K. PATEL AND N. MENARIA Integral transform of product of generalized k-Bessel function and generalized Hurwitz-Lerch Zeta function	1757–1764
M. PINGALE, R. PATHA, R. SHUKLA AND N. MANI Study of fixed point theorems using C-class function in partially ordered b-metric spaces	1765–1771
ISHA, N. MANI, ANJANA AND R. BHARDWAJ Common fixed point theorems satisfying rational contraction in partially ordered metric space	1773–1779
S. S. CHAUHAN, P. TYAGI AND N. MANI Rational Contraction Mapping in F -Modular b -Metric Spaces	1781–1786
ANJANA, N. MANI, A. SHARMA AND M. PINGALE Fixed points theorems for generalized C^ψ_β -rational contraction mapping in relational metric space	1787–1795
A. RATURI AND S. S. CHAUHAN New results in bipolar controlled b-dislocated metric space and its applications for solving fractional differential equations	1797–1803
S. SHARMA AND H. NAGAR The generalized Mittag-Leffler type function ${}_p^k R_q^{\alpha, \beta, \gamma}(z)$ associated with various new integral transforms	1805–1810

Y. Y. C. SANASAM AND S. S. CHAUHAN	
Kannan contraction mapping in strong controlled metric-type space	1811–1816
S. SHARMA AND M. CHAWLA	
Fibonacci statistical convergence of double sequences of order $\bar{\alpha}$ in intuitionistic fuzzy normed spaces (IFNS)	1817–1826
P. BALOURIA AND M. CHAWLA	
On λ -Fibonacci statistical convergence of order- α in intuitionistic fuzzy normed spaces (IFNS)	1827–1835
S. KUMAR, V. KUMAR AND A. SHARMA	
On Zweier $\mathcal{J}$ -convergent sequence spaces defined by Orlicz function in neutrosophic normed linear spaces	1837–1843
R. KAUR, V. KUMAR AND A. SHARMA	
On S^β -summability in neutrosophic- n -normed linear spaces	1845–1852
P. GAUTAM, H. NAGAR AND S. SHARMA	
The Marichev-Saigo-Maeda fractional calculus operator pertaining to the generalized multivariate Mittag-Leffler function	1853–1860
Y. MAHAJAN AND H. NAGAR	
Composition formulas for Saigo k -fractional operator associated with generalized k -Bessel Maitland function	1861–1867
H. NAGAR AND S. MISHRA	
Application of Marichev-Saigo-Maeda fractional differential and integral operators on composition of two special functions	1869–1874
J. I. SOLOMON AND M. CHAWLA	
Weighted statistical convergence of order $\tilde{\alpha}$ for double sequences in paranormed spaces	1875–1885
A. SHARMA, V. KUMAR AND A. SHARMA	
On $\Delta^m(J)$ summability in neutrosophic- n -normed linear spaces	1887–1893
S. CHANDEL AND S. S. CHAUHAN	
On some fixed-point results in bipolar b -metric space	1895–1901
M. DEVI AND S. S. CHAUHAN	
A new generalized common fixed point theorem	1903–1908
P. DHAWAN AND A. GREWAL	
B -multiplicative metric spaces : Coupled coincidence points with application	1909–1914
A. K. MENARIA	
Existence and uniqueness of linear and non-linear fractional differential equations	1915–1921
P. DHAWAN, V. GUPTA AND A. GREWAL	
Fixed point theorems for $(\zeta, \dot{\alpha}, \dot{\beta})$ -contraction	1923–1932
Index of Volume 27 (2024)	1933–1946