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Abstract: In this paper, we introduce and investigate a new subclass of the function class Σ of bi-univalent functions defined in the open unit disk, which are associated with the Hurwitz-Lerch zeta function and satisfy some subordination conditions. Furthermore, we find estimates on the Taylor-Maclaurin coefficients $|a_2|$ and $|a_3|$ for functions in the new subclass introduced here. Several (known or new) consequences of the results are also pointed out.

Abstract: In the present article, the double difference operator $_2\Delta^{\bar{\alpha}}$ of fractional order $\bar{\alpha}$ is introduced and certain results involving properties such as linearity, exponent laws etc. are also being studied. As a consequence, new classes of the difference double sequence spaces $\ell^2_\infty(_2\Delta^{(\bar{\alpha})}, t), c^2_0(_2\Delta^{(\bar{\alpha})}, t)$ and $c^2_b(_2\Delta^{(\bar{\alpha})}, t)$ of order $\bar{\alpha}$, $(\bar{\alpha} \in \mathbb{R})$ have been defined and their topological structures and other relations on these spaces have also been studied. Finally, using four dimensional infinite matrices, we determine their alpha-, beta- and gamma-duals

and characterize some classes of four dimensional matrix transformations on these spaces.

Mugur Acu, Olga Engel and Róbert Szász

PRESERVING PROPERTIES OF THE GENERALIZED BERNARDI INTEGRAL OPERATOR DEFINED ON A CLASS OF ANALYTIC FUNCTIONS WITH VARYING ARGUMENTS   311-321

Abstract: In this paper we study properties of the image of a class of analytic functions with varying arguments defined by the Ruscheweyh derivative, by the generalized Bernardi integral operator I_λ, γ.

David E. Dobbs

REDUCED COMMUTATIVE RINGS WHERE POLYNOMIALS HAVE MANY ROOTS   323-346

Abstract: For any integer $m \geq 3$, there exist a reduced non-Boolean commutative ring R which is not a domain and a polynomial $f \in R[X]$ such that $\deg(f) = m$, f induces the zero function $R \longrightarrow R$, and $\kappa := |R| > m$. It can be arranged that κ is, as one wishes, either an integer of the form $3 \cdot 2^n$ for some non-negative integer n or an arbitrary infinite cardinal number. If A is a nonzero finite commutative ring, then there exists a quadratic polynomial $h \in A[X]$ which induces the zero function $A \longrightarrow A$ if and only if there exists a maximal ideal M of A such that $A/M \cong \mathbb{F}_2$. Related results and examples are also given.

George A. Anastassiou

MOST GENERAL FRACTIONAL SELF ADJOINT OPERATOR REPRESENTATION
FORMULAE AND OPERATOR POINCARÉ AND SOBOLEV TYPE AND
OTHER BASIC INEQUALITIES   347-403

Abstract: We give here many very general fractional self adjoint operator Poincaré and Sobolev type and other basic inner product inequalities to various directions. Initially we give several very general fractional representation formulae in the self adjoint operator sense. Inequalities are based in the self adjoint operator order over a Hilbert space.

Hüsamettin Çapan and Feyzi Başar

SOME PARANORMED DIFFERENCE SPACES OF DOUBLE SEQUENCES 405-427

Abstract: Let $\vartheta \in \{p, bp\}$. In this paper, we study new paranormed spaces $\widehat{\mathcal{M}}_u(t)$, $\widehat{\mathcal{C}}_\vartheta(t)$ and $\widehat{\mathcal{C}}_{\vartheta 0}(t)$ of double sequences obtained as the domain of four-dimensional backward difference matrix Δ in the spaces $\mathcal{M}_u(t)$, $\mathcal{C}_\vartheta(t)$ and $\mathcal{C}_{\vartheta 0}(t)$, respectively. Also, we determine alpha-dual of the space $\widehat{\mathcal{M}}_u(t)$.

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