Indian Journal of Mathematics

Volume 63, No. 1, 2021

CONTENTS

Abstract: In this paper, we consider the eigenvalue problem for thin piezoelectric shells with nonuniform thickness and show that as the thickness goes to zero the eigensolutions of the three dimensional problem converge to the eigensolutions of a two dimensional problem.

Abstract: In this article, we introduce generalized q-shift monomial over non-Archimedean field. We also investigate the value sharing problem of q-shift monomials of entire functions analogue to c-shift monomials of entire functions and present some theorems which will drastically improve and extend some recent result due to Meng-Liu [13].

Abstract: Let $\Gamma := (V, E)$ be a graph and $\Sigma := (\Gamma, \sigma)$ be a signed graph with underling graph Γ. Let $\mu : V(\Sigma) \longrightarrow \{+, -\}$ be a C-marking. Then the function μ is called C-cordial labeling of signed graph Σ, if $|e_\sigma(-1) - e_\sigma(1)| \leq 1$ and $|v_\mu(-) - v_\mu(+)| \leq 1$, where $v_\mu(+)$ and $v_\mu(-)$ are the number of vertices of Σ having label '+' and '−', respectively under μ. In this paper, we have characterized signed cycles with given number of negative sections, which admit C-cordial labeling. We have also obtained a characterization of signed bistars which admit C-cordial labeling.

Abstract: Let R be a commutative ring with $1 \neq 0$. The notions of 2-absorbing ideal and 2-absorbing primary ideal were introduced by Ayman Badawi as a generalization of prime ideal and primary ideal respectively. A proper ideal I of R is called a 2-absorbing ideal (respectively, 2-absorbing primary ideal) if whenever $a, b, c \in R$ with $abc \in I$, then $ab \in I$ or $ac \in I$ or $bc \in I$ (respectively, $ab \in I$ or $ac \in \mathrm{Rad}(I)$ or $bc \in \mathrm{Rad}(I)$).

In this paper, we investigate the transfer of 2-absorbing-like properties to amalgamated algebra along an ideal.

Abstract: In this paper, the study of local convergence analysis for the fifth order convergent modified Weerakoon-Fernando method using a generalized Lipschitz-type condition is presented to obtain solutions of nonlinear operator equations in Banach spaces. In contrast to earlier studies, our analysis only requires the ω continuity of the first order Fréchet derivative and extends the applicability of the algorithm when the Lipschitz condition fails without engaging derivatives of the higher order. This convergence analysis generalizes the local convergence results with Lipschitz continuity condition and also offers radii of convergence, the error bounds and uniqueness of the solution. Several numerical tests are performed to show the usefulness of our theoretical results.

Abstract: We present a new plan of attack for estimating the minor arcs. Additionally, in the process, we do not assume GRH.

Abstract: Let $\beta = \{\beta_n\}_{n\in\mathbb{Z}}$ be a sequence of positive numbers with $\beta_0 = 1$, $r \leq \frac{\beta_n}{\beta_{n+1}} \leq 1$ for $n \geq 0$, and $r \leq \frac{\beta_n}{\beta_{n-1}} \leq 1$ for $n \leq 0$, for some $r > 0$. The space $L^2(\beta)$ consists of all $f(z) = \sum_{-\infty}^{\infty} a_n z^n$, $a_n \in \mathbb{C}$ for which $\sum_{-\infty}^{\infty} |a_n|^2\beta_n^2 < \infty$; $H^2(\beta)$ is the subspace consisting of all analytic elements of $L^2(\beta)$. For a bounded function $\varphi(z) = \sum_{-\infty}^{\infty} a_n z^n$, the slant weighted Toeplitz operator $A_\varphi^{(\beta)}$ is an operator on $L^2(\beta)$ defined as $A_\varphi^{(\beta)} = WM_\varphi^{(\beta)}$, where $M_\varphi^{(\beta)}$ is the weighted multiplication operator on $L^2(\beta)$ and W is an operator on $L^2(\beta)$ such that $Wz^{2n} = z^n$, $Wz^{2n-1} = 0$ for all $n \in \mathbb{Z}$. The compression of $A_\varphi^{(\beta)}$ to $H^2(\beta)$ is denoted by $B_\varphi^{(\beta)}$. Thus $B_\varphi^{(\beta)} = WT_\varphi^{(\beta)}$, where $T_\varphi^{(\beta)}$ is the weighted Toeplitz operator on $H^2(\beta)$. In this paper, we determine the minimal reducing subspaces of $B_\varphi^{(\beta)}$, where $\varphi(z) = z^N$ for any $N \in \mathbb{Z}$. We also include several examples to illustrate our results.

Abstract: Even though there are unique analytic solutions to the tetration problem $F(z + 1) = b^{F(z)}$, for different bases b, we show that two solutions with two different bases cannot be contained in the same Hardy field. Furthermore, we show that the fractional iterations produced by the tetrations are also incompatible within a Hardy field.

Dorota Bród, Anetta Szynal-Liana and Iwona Włoch

Abstract: In this paper, we present some properties of Horadam hybrid numbers. Moreover, we introduce and study some kind of Horadam hybrid numbers-balancing hybrid numbers and Lucas-balancing hybrid numbers. We present some well-known properties, e.g. Catalan, Cassini, d'Ocagne identities for balancing and Lucas-balancing hybrid numbers.

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