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RIVOJLANISH VAZIRLIGI

IQTIDORLI TALABALAR, MAGISTRANTLAR, TAYANCH DOKTORANTLAR VA DOKTORANTLARNING

TAFAKKUR VA TALQIN

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MAGISTRATURA BO’LIMI

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kabi belgilash kiritib, shu tenglamadan $f_1(x)$ funksiya uchun quyidagi ifodani topib olamiz:

$$f_1(x)=\frac{g_1-\mu v_0(x)+\lambda v_1(x)c}{u(x)-z} \tag{4}$$

$f_1(x)$ uchun topilgan (4) ifodani (2) tenglamalar sistemasining birinchi tenglamasiga va (3) belgilashlarga olib borib qo'yamiz. Yuqoridagi belgilashlar va $I(z)=0$ tenglikdan foydalansak quyidagi tenglikka ega bo'lamiz:

$$\begin{cases} f_0=\dfrac{g_0}{\Delta_\mu^{(1)}(z)}-\dfrac{\mu}{\Delta_\mu^{(1)}(z)}\displaystyle\int_{T^d}\frac{v_0(t)g_1(t)dt}{u(t)-z}; \\ c=0\cdot g_0+\ \dfrac{1}{\Delta_\lambda^{(2)}(z)}\displaystyle\int_{T^d}\frac{v_1(t)g_1(t)dt}{u(t)-z}. \end{cases}$$

$A_{\mu,\lambda}$ blok operatorli matritsaning $I(z)=0$ tenglik o'rinli bo'lganda rezolventasi H Gilbert fazosida

$$R_\mu(z)=\begin{pmatrix} R_{00}(z) & R_{01}(z) \\ R_{10}(z) & R_{11}(z) \end{pmatrix}$$

ko'rinishda bo'ladi. Bu yerda:

$$R_{00}(z)g_0=\frac{g_0}{\Delta_\mu^{(1)}(z)};\ R_{01}(z)g_1=-\frac{\mu}{\Delta_\mu^{(1)}(z)}\int_{T^d}\frac{v_0(t)g_1(t)dt}{u(t)-z};$$

$$R_{10}(z)=0;\ (R_{11}(z)g_1)(x)=\frac{1}{\Delta_\lambda^{(2)}(z)}\int_{T^d}\frac{v_1(t)g_1(t)dt}{u(t)-z}.$$

Foydalanilgan adabiyot

1. J.I.Abdullayev va boshqalar. Funksional analiz. Toshkent-Samarqand, 2009.

P-ADIC DYNAMICAL SYSTEMS OF THE FUNCTION a/(x − 2b).

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Abstract. In this paper, we study p-adic dynamical systems generated by rational functions. We consider the function $f(x)=\frac{a}{x-2b}$ and study the

dynamical systems generated by this function in C_p. We give fixed points, periodic points, basin of attraction and Siegel disk of each fixed points.

Keywords: Rational dynamical systems; fixed point; invariant set; Siegel disk; complex p-adic field.

It is known that the theory of p-adic numbers has numerous applications in many branches of mathematics, biology, physics and other sciences.

Consider the dynamical system associated with the function $f : C_p \to C_p$ defined by

$$f(x) = \frac{a}{x - 2b}, \ a \neq 0, a, b \in C_p,$$

where $x \neq 2b$.

Our goal here is to investigate the behavior of trajectories of $f(x) = \frac{a}{x - 2b}$ in the complex p-adic filed C_p.

Remark . Note that the value $B^* = \phi(B)$ is not concretely defined. We only have its estimation. But in our analysis the estimations given for undefined value will be sufficient. Let the function $\phi : [0, +\infty) \to [0, +\infty)$ be defined by . The following simple lemma shows that the real dynamical system compiled from ϕ^n is directly related to the p-adic dynamical system

$$f^n(x), \quad n \geq 1, \ x \in Cp \setminus P .$$

Lemma 1 . If $x \in S_r(x_1)$, then the following holds for the function :

$$|f^n(x) - x_1|_p = \phi^n(r).$$

The following lemma gives properties of this real dynamical system.

Lemma 2 . The function ϕ has the following properties

1. $Fix(\phi) = \{r : 0 \leq r < B\} \cup \{B : \text{if } B^* = B\}$
2. If $r = B$ then $\phi(B) = B^*$, $\phi(B^*) = B$.
3. If $r > B$ then $\phi(r) = B$, $\phi(B) = B^*$, $\phi(B^*) = B$.

References

1.S. Albeverio, U.A. Rozikov, I.A. Sattarov. p-adic (2, 1)-rational dynamical systems. Jour. Math. Anal. Appl. 398(2) (2013), 553–566.

2. S. Albeverio, B. Tirozzi, A.Yu. Khrennikov, S. de Shmedt, p-adic dynamical systems. Theoret. and Math. Phys. 114(3) (1998), 276–287.

3. U.A. Rozikov, I.A. Sattarov, S. Yam, p-adic dynamical systems of the function

4. $f(x)=\frac{ax}{x^2-a}$ p-Adic Numbers Ultrametric Anal. Appl. 11(1) (2019), 77–87.

PANJARADAGI UCH ZARRACHALI MODEL OPERATORGA MOS KANAL OPERATORLAR

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Annotatsiya. Bir o'lchamli panjarada lokal bo'lmagan potensialga ega uchta zarrachalar sistemasiga mos model operator qaraladi. Unga mos keluvchi ikkita kanal operatorlar aniqlanib, bu operatorlarning spektrlari tavsiflanadi.

Kalit so'zlar: panjara, model operator, lokal bo'lmagan potensial, kanal operator, spektr.

Panjaradagi uchta zarrachalar sistemasiga mos model operatorlarning (Gamiltonianlarning) muhim spektrini o'rganish masalasi chiziqli operatorlar spektral nazariyasining dolzarb muammolaridan biri hisoblanadi. Bunday model operatorlarning muhim spektrini tadqiq qilishda nisbatan sodda ko'rinishga ega "kanal operatorlar" deb ataluvchi operatorlarni aniqlash hamda ular spektrlari orasidagi bog'lanishni topish muhim ahamiyatga ega. Shu sababli mazkur maqolada kanal operatorlar topilgan. To'g'ri integralga yoyish usulidan foydalanib kanal operatorlarning spektral xossalarini o'rganish masalasi Fridrixs

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