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[Bicomplex Holomorphic Functions The Algebra](#)

Bicomplex Numbers and their Elementary Functions

is to show that a function theory on bicomplex numbers is, in some sense, a better generalization of the theory of holomorphic functions of one variable, than the classical theory of holomorphic functions in two complex variables RESUMEN En este artículo introducimos el algebra de números bicomplejos como una general-

Holomorphic Functions: The Algebra,

Functions Bicomplex Holomorphic The Algebra, Geometry and Analysis of Bicomplex Numbers M Elena Luna-Elizarrarás • Michael Shapiro Daniele C Struppa • Adrian Vajiac

Bicomplex holomorphic functional calculus

of monogenic functions (see the book [8]) The theory of several complex variables gives rise to a functional calculus that is based on the joint

spectrum of operators The analysis of bicomplex holomorphic functions started in the thirties with the works ...

Bicomplex Weighted Hardy Spaces and Bicomplex C^* -algebras ...

ysis Hardy spaces are the spaces of holomorphic functions on different domains in \mathbb{C} or in \mathbb{C}^n In this paper we study the bicomplex version of the weighted Hardy spaces with a hyperbolic (D -valued) norm which is a generalization of real-valued norm In section 2, we define bicomplex C^* -algebra and describe its relation with the classical \mathbb{C}

Normal Families of Bicomplex Holomorphic Functions

Bicomplex Montel Theorem from Montel Theorem of \mathbb{C}^2 Bicomplex Montel Theorem through Idempotent Decomposition 3 Foundation of Bicomplex Dynamics A More General Definition of Normality Fatou and Julia Sets for Polynomials D Rochon Normal Families of Bicomplex Holomorphic Functions

arXiv:math/0101200v1 [math.CV] 24 Jan 2001

The bicomplex functions of interest are the holomorphic ones, which are characterized by the fact that they are differentiable They are almost isomorphic to the complex holomorphic functions, not surprisingly, because the operations of the bicomplex algebra are almost isomorphic to those of the complex algebra The bicomplex algebra has an

Singularities of functions of one and several bicomplex ...

Singularities of functions of one and several bicomplex variables Fabrizio Colombo, Irene Sabadini, Daniele C Struppa, Adrian Vajiac and Mihaela B Vajiac Abstract In this paper we study the singularities of holomorphic functions of bicomplex variables introduced by G B Price (An Introduction to Multicomplex Spaces and Functions,

Solution of Maxwell's Wave Equations in Bicomplex Space

In 1928 and 1932, Futagawa developed the concept of holomorphic functions of a bicomplex variable in a series of papers [9], [10] In 1934, Dragoni [11] discussed some basic results of bicomplex holomorphic functions while Price [12] and Ronn [13] have developed the bicomplex algebra ...

Maximum and Minimum Modulus Principle for Bicomplex ...

Maximum and Minimum Modulus Principle for Bicomplex Holomorphic Functions Mr Anand Kumar, †Mr Pravindra Kumar, Mr Pranav Dixit Department of Applied Science, Roorkee Engineering & ...

B -VALUED MONOGENIC FUNCTIONS TO THE THEORY OF ...

A function $\Phi \in MB_0(D\zeta)$ can be expressed in terms of two holomorphic functions of the complex variable z and z_p , respectively The following theorem obtained with use of (21) similar to analogous theorem in [16] Theorem 3 The function $\Phi: D\zeta \rightarrow B_0$ is monogenic in the domain $D\zeta$ if and only if the following equality is true:

Bicomplex extensions of zero mean curvature surfaces in \mathbb{R}

In x2, we summarize basic facts on B and bicomplex holomorphic functions in a form suitable for our purpose, and in x3, consider zero mean curvature complex surfaces in \mathbb{C}^n which are given by projections of bicomplex holomorphic maps, and give a generic results for such maps to have fold singularities In xx4-5, we observe bicomplex extensions

On a new type of conformality in \mathbb{R}^4 bicomplex holomorphic ...

conformality of bicomplex holomorphic functions For this new notion, it is presented a positive hyperbolic-valued norm defined on **the algebra of bicomplex** numbers As a second step it is presented the trigonometric re-presentation of **bicomplex** numbers in hyperbolic terms, this means that

not

1. [PDF]

[Bicomplex Version of Laplace Transform - Engg Journals](#)

www.enggjournals.com/ijet/docs/IJET11-03-03-20.pdf

2 Certain Basics of **Bicomplex** Analysis: In 1928 and 1932, Michiji Futagawa originated the concept of **holomorphic functions** of a **bicomplex** variable, in a series of papers [3], [4] In 1934, Dragoni [5] gave some basic results in the theory of **bicomplex holomorphic functions** A full account of the updated theory can be had from Price[6]

2. [PDF]

[DUAL-COMPLEX NUMBERS AND THEIR HOLOMORPHIC ...](#)

fsunmedu/SN/DualComplexNumbers.pdf

resentation of **holomorphic** dual-complex **functions** was shown It is proved here that many important properties of **holomorphic functions** of one complex variable may be extended in the framework of dual-complex analysis Further, we also focus on the continuation of complex **functions** to the **algebra**

3. [PDF]

[arXiv:14044236v1 \[mathCV\] 16 Apr 2014](#)

<https://www.researchgatenet/profile/Abhijit>

arXiv:14044236v1 [mathCV] 16 Apr 2014 Fourier transform and its inverse for **functions** of **bicomplex** variables A Banerjee^{1*}, S K Datta^{2†}, MdA Hoque^{3‡} ¹Department of Mathematics, Krishnath

4. [PDF]

[On Factorization of Bicomplex Meromorphic Functions](#)

www.3dfractals.com/docs/BMF_Final_Birkhauser.pdf

On **Factorization of Bicomplex Meromorphic Functions** 57 if the set: $\{a \in T : F(w) + a\varphi(w) \text{ is not prime}\}$ is empty or of cardinality ≤ 1 for any non-constant fractional linear bicomplex function φ . Moreover, as specific application, we obtain six additional possible

Hyperbolic Algebraic and Analytic Curves

$S \rightarrow V$ is a holomap, then any holomorphic function φ on V can be lifted to the function $\varphi \circ h$ on S . Not all functions on S arise in this way: for example, such functions must identify all points that h identifies. But the set of functions on S that do factor through V via h is an algebra, of finite codimension. Let us make two definitions

Generalized numbers and their holomorphic functions

of generalized numbers and their holomorphic functions. In the study of generalized functions, natural question arises whether it is possible to extend the concept of holomorphy to generalized functions and if it is possible to obtain Cauchy-Riemann formulas for generalized numbers unifying those known for complex, hyperbolic and dual cases?

Self-Inversive Bicomplex Polynomials

Self-Inversive Bicomplex Polynomials 57 Definition 3 The derivative of the function f at a point $Z_0 \in U$ is the limit, if it exists, $f'(Z_0) := \lim_{Z \rightarrow Z_0} \frac{f(Z) - f(Z_0)}{Z - Z_0}$ for Z in the domain of f such that $Z - Z_0$ is an invertible bicomplex number. We shall say that the function f is bicomplex holomorphic (C^1 -holomorphic) on an open set U if and only if f is C^1 -differentiable at each point.

On Clifford Analysis for Holomorphic Mappings

414 M E Luna-Elizarrarás, M Shapiro and D C Struppa In this paper, we will see that complex valued holomorphic functions play, in complex Clifford analysis, a role similar to the one played by C^1 -functions in real Clifford analysis. Specifically, we will consider holomorphic mappings from C^n or from C^{n+1} into C^{2n} but, in contrast with classic holomorphic mappings where the components are