ICMASE 2021

II. INTERNATIONAL CONFERENCE ON MATHEMATICS

AND ITS APPLICATIONS IN SCIENCE AND ENGINEERING (ICMASE 2021)

ABSTRACT BOOK

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Preface

This abstract booklet includes the abstracts of the papers that have been presented at II. International Conference on Mathematics and its Applications in Science and Engineering (ICMASE 2021) which is held in University of Salamanca, Spain between 1-2 July, 2021, via online because of COVID-19 pandemic. The aim of this conference is to exchange ideas, discuss developments in mathematics, develop collaborations and interact with professionals and researchers from all over the world about some of the following interesting topics: Functional Analysis, Approximation Theory, Real Analysis, Complex Analysis, Harmonic and non-Harmonic Analysis, Applied Analysis, Numerical Analysis, Geometry, Topology and Algebra, Modern Methods in Summability and Approximation, Operator Theory, Fixed Point Theory and Applications, Sequence Spaces and Matrix Transformation, Modern Methods in Summability and Approximation, Spectral Theory and Diferantial Operators, Boundary Value Problems, Ordinary and Partial Differential Equations, Discontinuous Differential Equations, Convex Analysis and its Applications, Optimization and its Application, Mathematics Education, Applications on Variable Exponent Lebesgue Spaces, Applications on Differential Equations and Partial Differential Equations, Fourier Analysis, Wavelet and Harmonic Analysis Methods in Function Spaces, Applications on Computer Engineering, Flow Dynamics. However, the talks are not restricted to these subjects.

Thanks to all committee members.

We wish everyone a fruitful conference and pleasant memories from ICMASE 2021.

Prof. Dr. Araceli QUEIRUGA-DIOS,

Assoc. Prof. Dr. Fatih YILMAZ

Chairs, ICMASE 2021

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01-12 July 2021, Universidad de Salamanca

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HYPERSURFACE FAMILIES CONSTRUCTED BY ISOPARAMETRIC SMARANDACHE CURVES OF AN ASYMPTOTIC CURVE IN G_4

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ABSTRACT

A curve $\delta(v)$ on a hypersurface $\Omega(v, \vartheta, \zeta)$ is geodesic if and only if normal $N(v)$ of the curve $\delta(v)$ and normal $\eta(v, \vartheta_0, \zeta_0)$ of the hypersurface $\Omega(v, \vartheta, \zeta)$ at any point on the curve $\delta(v)$ are parallel to each other. If the curve is both geodesic and parameter (isoparametric) curve on the hypersurface Ω, then it is called isogeodesic on the hypersurface Ω. In [6], by utilizing the Frenet trihedron frame along the given geodesic, the authors have expressed the surface pencil as a linear combination of the components of this local coordinate frame and derived the necessary and sufficient conditions for the coefficients to satisfy both the geodesic and the isoparametric requirements. In 2008, the generalization of the Wangs' assumption to more general marching-scale functions has been given in [3].

Furthermore, an asymptotic curve, which is an important topic for differential geometers and used in astronomy, astrophysics and CAD in architecture, is a curve α in a regular surface $M \subset R^3$ for which the normal curvature vanishes in the direction α'. And a curve $\delta(v)$ on the hypersurface $\Omega(v, \vartheta, \zeta)$ is asymptotic if and only if normal $N(v)$ of the curve $\delta(v)$ and normal $\eta(v, \vartheta_0, \zeta_0)$ of the hypersurface $\Omega(v, \vartheta, \zeta)$ at any point on the curve $\delta(v)$ are perpendicular. If the curve is both asymptotic and parameter (isoparametric) curve on Ω, then it is called isoasymptotic on the hypersurface Ω.

In the present study, we deal with the hypersurface families with Smarandache curves in 4-dimensional Galilean space G_4. In this context, we construct eleven types of hypersurface families with different Smarandache curves and we state a main theorem with the aid of a table which contains the conditions for the curve to be asymptotic where Smarandache curves of the curve are isoparametric on hypersurfaces. Also, we give an example for these hypersurface families.

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