WAVOO WAJEEHA WOMEN'S COLLEGE
OF ARTS & SCIENCE - KAYALPATNAM

(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)
Run by Wavoo SAR Educational Trust
(Minority Institution)

Criterion 3

Research, Innovations and Extension

3.3.1. Number of research papers published per teacher in the Journals as notified on UGC CARE list

Academic Year (2020-2021)

Supporting Document

Submitted to

THE NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

(NAAC)

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISSN number
1	G. Padma Karthiyayini	An Innovative Method To Solve Transportation Problem Based On A Statistical Tool	2020	**1857-8365**

ADV MATH SCI JOURNAL

Advances in Mathematics: Scientific Journal **9** (2020), no.5, 2533–2539
ISSN: 1857-8365 (printed); 1857-8438 (electronic)
https://doi.org/10.37418/amsj.9.5.16

AN INNOVATIVE METHOD TO SOLVE TRANSPORTATION PROBLEM BASED ON A STATISTICAL TOOL

G. PADMA KARTHIYAYINI[1], S. ANANTHALAKSHMI, AND R. USHA PARAMESWARI

ABSTRACT. Transportation Problem is one of the models in the linear programming problems. In this paper, we have developed a new method for finding of the initial basic feasible solution of the transportation problem. The objective of this paper is to find how to transport the product from the origin to the destination such that the transportation cost will be minimized. To achieve this new approach, the transportation problem under uncertainty, is considered by using of the arithmetic mean.

1. INTRODUCTION

In the linear programming problems, Transportation Problem (TP) plays an important role. Nowadays, the business environment competition is raising a day by day and it is most important for every goods to deliver products to customers in the cost effective way by satisfying their demandsfor dealing with human uncertainty, [3]. Uncertainty theory was founded by Liu (2007) and refined by Liu (2010) based on normality, duality, sub additivity and product axioms. TP was developed by Hitchcock, [4] concerning its special structure for finding initial basic feasible solution such as, North west corner method (NWCM), Least cost method, vogel's approximation method given by Reinfeld et al. in [9]. There are two types of TPs, first type is balanced TP and the second

[1]*corresponding author*

2010 *Mathematics Subject Classification.* 62P12.
Key words and phrases. Transportation problem(TP), Arithmetic Mean, Uncertainty , Initial basic feasible solution.

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISSN number
2	பேராசிரியர் வி.செல்வி	திரமூலர் காட்டும் அறிவியல் குரத்துக்குள	23.05.2021	**2321-984X**

திருமூலர் காட்டும் அறிவியல் கருத்துக்கள்

வி.செல்வி

முன்னுரை:

"மூலன் உரை செய்த மூவாயிரம் தமிழ்"

தாவரவியல் அறிவு:

மானுடப்பிறப்பும் அறிவியலும்:

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISSN number
3	Miss. S. Malathi	On Contra -Generalized C*-Irresolute Functions In Topology	2020	0025-0422

Journal of the Maharaja Sayajirao University of Baroda
ISSN : 0025-0422

ON CONTRA-GENERALIZED C*-IRRESOLUTE FUNCTIONS IN TOPOLOGICAL SPACES

S. Malathi Assistant Professor,Department of Mathematics, Wavoo Wajeeha Women's College of Arts and Science, Kayalpatnam -628204, Tamilnadu, India.

Abstract: The aim of this paper is to introduce the notion of contra-generalized c*-irresolute functions in topological spaces and study their basic properties. Also, we see that composition of two contra-generalized c*-irresolute functions is contra-generalized c*-irresolute function. This is the main part of this paper. Also, the contra-generalized c*-irresolute function of a generalized c*-irresolute function is contra-generalized c*-irresolute function. Further, we prove contra-generalized c*-irresolute function is the stronger form of contra-gc*-continuous function.

Key words: gc*-continuous functions,contra-gc*-continuous functions, gc*-irresolute functions and contra-gc*-irresolute functions.

2010MathematicsSubject Classification: 54A05, 54C99

1. Introduction

In 1963, Norman Levine [5] introduced semi-open sets in topological spaces. Also in 1970, he introduced the concept of generalized closed sets.In 1980, Jain[4] introduced totally continuous functions. Dontchev[3] introduced the notions of contra continuity in topological spaces in 1996. In 2011,S.S. Benchalli and Umadevi I Neeli[1]introduced the concept of semi-totally continuous functions in topological spaces.In this paper we introduce contra-generalized c*-irresolute functions in topological spaces and study their basic properties.Section 2 deals with the preliminary concepts. In section 3, contra-generalized c*-irresolute functions are introduced and study their basic properties.

2. Preliminaries

Throughout this paper X denotes a topological space on which no separation axiom is assumed. For any subset A of X, cl(A) denotes the closure of A, int(A) denotes the interior of A. Further X\A denotes the complement of A in X. The following definitions are very useful in the subsequent sections.

Definition: 2.1 [5]A subset A of a topological space X is said to be a semi-open set if $A \subseteq cl(int(A))$ and a semi-closed set if $int(cl(A)) \subseteq A$.

Definition: 2.2 [14]A subset A of a topological space X is said to be a α-open set if $A \subseteq int(cl(int(A)))$ and a α-closed set if $cl(int(cl(A))) \subseteq A$.

Definition: 2.3 [6]A subset A of a topological space X is said to be a c*-open set if $int(cl(A)) \subseteq A \subseteq cl(int(A))$.

Definition: 2.4 [6]A subset A of a topological space X is said to be a generalized c*-closed set (briefly, gc*-closed set)if $cl(A) \subseteq H$ whenever $A \subseteq H$ andH is c*-open. The complement of the gc*-closed set is gc*-open [7].

Definition: 2.5 [9]A subset A of a topological space X is said to be apre-generalized c*-closed set (briefly, pgc*-closed set)if $pcl(A) \subseteq H$ whenever $A \subseteq H$ andH is c*-open. The complement of thepgc*-closed set is pgc*-open [10].

Definition: 2.6A function $f : X \to Y$ is called

i. totally-continuous [4] if the inverse image of every open subset of Y is clopen in X,
ii. strongly-continuous [15] if the inverse image of every subset of Y is clopen subset of X,
iii. semi-totally continuous [1] if the inverse image of every semi-open subset of Y is clopen in X &

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISSN number
4	Miss. S. Malathi	On Trigonometric Topological Spaces	2020	2477-2488

ADV MATH SCI JOURNAL

Advances in Mathematics: Scientific Journal **9** (2020), no.5, 2477–2488
ISSN: 1857-8365 (printed); 1857-8438 (electronic)
https://doi.org/10.37418/amsj.9.5.11

ON TRIGONOMETRIC TOPOLOGICAL SPACES

S. MALATHI[1] AND R. USHA PARAMESWARI

ABSTRACT. In this paper we introduce a new topological space, namely, Trigonometric topological space. A Strong trigonometric topological space is a topological space in which two topologies Sine and Cosine topologies induced from the given topology are coincide. Further, we discuss the properties of Interior and Closure operators in Sine and Cosine topological spaces.

1. INTRODUCTION

In this paper, we introduce Trigonometric topological spaces. These spaces are based on Sine and Cosine topologies. In a bitopological space we have considered two different topologies but in a trigonometric topological space the two topologies are derived from one topology. So, we observe that trigonometric topological space is different from bitopological space. Also, we define interior and closure operators in Sine and Cosine topological spaces and study their basic properties.

Section 2 deals with the preliminary concepts. In section 3, Sine and Cosine topologies are introduced together with their basic properties. The Trigonometric topological spaces are introduced in Section 4.

[1]*corresponding author*

2010 *Mathematics Subject Classification.* 54A05.

Key words and phrases. Sine topology, Cosine topology, Trigonometric topology.

Sl. No.	Name of the teacher	Title of the paper/book	Calendar Year of publication	ISSN number
5	Miss. S. Malathi	On T-Neighborhoods In Trigonometry Topological Spaces	2021	-

Turkish Journal of Computer and Mathematics Education *Vol.12 No.1S (2021), 655-658*

Research Article

On t-Neighbourhoods in Trigonometric Topological Spaces

[1]S. Malathi, [2]Dr. R. Usha Parameswari& [3]S. Malathi

[1]Research Scholar ,(Reg. No: 19222072092001),
[2] Assistant Professor,, [1,2]Department of Mathematics, Govindammal Aditanar College for Women, Tiruchendur, Affiliated to Manonmaniam Sundaranar University, Abishekapatti,
Tirunelveli-627 012, India. [1]malathis2795@gmail.com , [2]rushaparameswari@gmail.com
[3]Assistant Professor,Department of Mathematics, Wavoo Wajeeha Women's College of Arts and Science, Kayalpatnam-628 204, India.

Article History:Received:11 January 2021; Accepted: 27 February 2021; Published online: 5 April 2021

Abstract: In this paper we introduce a new type of neighbourhoods, namely, t-neighbourhoods in trigonometric topological spaces and study their basic properties. Also, we discuss the relationship between neighbourhoods and t-neighbourhoods. Further, we give the necessary condition for t-neighbourhoods in trigonometric topological spaces. .

Keywords: t-open; t-closed; t-neighbourhood

1. Introduction

In this paper, we introduce t-neighbourhoods in Trigonometric topological spaces. These spaces are based on Sine and Cosine topologies. In a bitopological space we have consider two different topologies but in a trigonometric topological space the two topologies are derived from one topology. From this, we observe that trigonometric topological space is different from bitopological space.

Section 2 deals with the preliminary concepts. In section 3, t-neighbourhoods are introduced and study their basic properties.

2. Preliminaries

Throughout this paper X denotes a set having elements from $[0, \frac{\pi}{2}]$. If (X,τ) is a topological space, then for any subset A of X, X\A denotes the complement of A in X. The following definitions are very useful in the subsequent sections.

Definition: 2.1 [2] Let X be any non-empty set having elements from $[0, \frac{\pi}{2}]$ and τ be the topology on X. Let SinX be the set consisting of the Sine values of the corresponding elements of X. Define a function f_s:X→SinX by $f_s(x)$=Sin x. Then f_s is a bijective function. This implies, $f_s(\phi)=\phi$ and $f_s(X)$=Sin X. That is, Sin $\phi=\phi$.
Let τ_s be the set consisting of the images (under f_s) of the corresponding elements of τ. Then τ_s form a topology on $f_s(X)$=SinX. This topology is called a Sine topology (briefly, Sin-topology) of X. The space (SinX,τ_s) is said to be a Sine topological space corresponding to X.
The elements of τ_s are called Sin-open sets. The complement of Sin-open sets is said to be Sin-closed. The set of all Sin-closed subsets of SinX is denoted by τ_s^c.

Definition: 2.2 [2] Let X be any non-empty set having elements from $[0, \frac{\pi}{2}]$ and τ be the topology on X. Let CosX be the set consisting of the Cosine values of the corresponding elements of X. Define a function f_c:X→CosX by $f_c(x)$=Cos x. Then f_c is bijective. Also, $f_c(\phi)=\phi$ and $f_c(X)$=CosX. This implies, Cos$\phi=\phi$.

Let τ_{cs} be the set consisting of the images (under f_c) of the corresponding elements of τ. Then τ_{cs} form a topology on CosX. This topology is called Cosine topology (briefly, Cos-topology) of X. The pair (CosX,τ_{cs}) is called the Cosine topological space corresponding to X. The elements of τ_{cs} are called Cos-open sets. The complement of the Cos-open set is said to be Cos-closed. The set of all Cos-closed subsets of Cos X is denoted by τ_{cs}^c.

Definition: 2.3 [2] Let X be a non-empty set having elements from $[0, \frac{\pi}{2}]$. Define $T_u(X)$ by $T_u(X)$=SinX∪CosX and $T_i(X)$ by $T_i(X)$=SinX∩CosX.