South East Asian J. of Mathematics and Mathematical Sciences Vol. 17, No. 3 (2021), pp. 189-208

ISSN (Online): 2582-0850

ISSN (Print): 0972-7752

## COUPLED FIXED POINT THEOREMS OF WEAKLY C-CONTRACTION WITH MIXED MONOTONE PROPERTY IN ORDERED MODULAR METRIC SPACES

## Shishir Jain and Yogita Sharma\*

Department of Mathematics, Shri Vaishnav Vidyapeeth Vishwavidyalaya, Gram Baroli, Sanwer Road, Indore - 453111, (M. P.), INDIA

E-mail : jainshishir11@rediffmail.com

\*Department of Computer Science, Shri Vaishnav Institute of Management, Gumashta Nagar, Indore - 452009, (M. P.), INDIA

E-mail : yogitasharma2006@gmail.com

(Received: Nov. 30, 2020 Accepted: Nov. 02, 2021 Published: Dec. 30, 2021)

**Abstract:** In this paper, we introduce the notion of weakly *C*-contraction using altering distance function in the setting of modular metric space equipped with partially ordered relation and proved some coupled fixed point results. The results are supported by examples.

**Keywords and Phrases:** Coupled fixed point, *G*-monotone mapping, weakly C-contraction, modular metric space, partially ordered set.

2020 Mathematics Subject Classification: 47H09, 47H10, 46A80.

## 1. Introduction

The Banach contraction principle [4] was introduced by Banach in his thesis in 1922. It is a very popular tool for solving the existing problems in many branches of mathematical analysis. Due to it's applications in mathematics, the Banach contraction principle has been generalized in various settings. In particular, Chatterjea [6] introduced the concept of C-contraction. In 1997, Alber and