ω-INTERPOLATIVE ĆIRIĆ-REICH-RUS TYPE CONTRACTIONS IN M-METRIC SPACE

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Abstract: In this paper, we generalize the concept of ω-interpolative Ćirić-Reich-Rus Type Contractions in the framework of M-metric spaces, to find the fixed points and proved some fixed points results for such mappings. Moreover an illustration is provided to support our applicability of obtained results.

Keywords and Phrases: ω-interpolative Ćirić-Reich-Rus Type contraction, M-metric space, ω-orbital.

2020 Mathematics Subject Classification: 47H10, 54H25, 37C25.

1. Introduction and Preliminaries

In 2014, Mehdi Asadi et al. [4] introduced the concept of M-metric space which has a nonzero self distance, as a generalization of metric space. Erdal Karapinar [4] established interpolative contraction to prove existence of fixed points in Metric space. He states that: "For a metric space (X, d), the self mapping $T : X \to X$ is said to be an interpolative kannan type contraction, if there are constants $\lambda \in [0, 1)$ and $\alpha \in (0, 1)$ such that

$$d(Tx, Ty) \leq \lambda[d(x, Tx)]^{\alpha}[d(y, Ty)]^{1-\alpha},$$

for all $x, y \in X$ with $x \neq Tx$."
In this paper we wield such interpolative contraction using ω- admissible functions. The notion of ω-orbital admissible maps was introduced by Popescu as a refinement