

**INTERPOLATIVE HARDY-ROGERS TYPE CONTRACTION ON
PARTIAL FUZZY METRIC SPACES AND RELATED FIXED
POINT RESULTS**

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Abstract: In this paper, we introduce a new class of fuzzy interpolative Hardy–Rogers type contractions in the frameworks of fuzzy metric spaces and partial fuzzy metric spaces. We establish fixed point theorems guaranteeing the existence and uniqueness of fixed points under suitable contractive conditions involving control parameters. The obtained results extend and unify several known results in the literature, including classical Hardy–Rogers type contractions in fuzzy and partial fuzzy settings. Illustrative examples are also provided to demonstrate the applicability of the proposed results.

Keywords and Phrases: Fuzzy metric space, interpolative Hardy-Rogers contraction, partial fuzzy metric space, fixed point.

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1. Introduction

In 1965, Zadeh [25] introduced the theory of fuzzy sets to handle uncertainty through the concept of membership functions. This theory has found extensive applications in various fields such as engineering, computer science and applied mathematics, where uncertainty and vagueness are inherent.