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EXISTENCE OF BEST PROXIMITY PAIRS FOR MULTIVALUED MAPPINGS SATISFYING CONTRACTIVE CONDITIONS IN HYPERBOLIC SPACES

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Abstract: We consider two nonempty subsets $\mathcal{A}$ and $\mathcal{B}$ be of a hyperbolic space $(\bar{X}, d, \mathcal{W})$ and $T : \mathcal{A} \to 2^{\mathcal{B}}$ is a multivalued nonself-mapping. We establish a existence theorem for a best proximity pair $\bar{x}$ such that $d(\bar{x}, T\bar{x}) = d(\mathcal{A}, \mathcal{B}) = \inf\{d(x, y) : x \in \mathcal{A}, y \in \mathcal{B}\}$.

Keywords and Phrases: Best proximity pair, hyperbolic spaces, proximinal retract.

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1. Introduction

The classical fixed point problem deals with the objective to seek a invariant point of a mapping $T : \mathcal{X} \to \mathcal{X}$, where $\mathcal{X}$ is a complete metric space endowed with a