

- ▶ H.D.MACPHERSON, *Definable sets in finite structures.*
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Bi-Lipschitz maps between metric spaces with a bounded distortion are called Quasi-isometries. Informally, two metric spaces are quasi-isometric if these spaces look the same from far away. Quasi-isometry relation forms an equivalence relation on the class of all metric spaces, and quasi-isometry invariants are known to be crucial in group theory. Meanwhile, infinite string over finite alphabets is one of the main objects in discrete mathematics, such as geometric group theory, formal language theory, or logic.

In the talk we introduce a notion of quasi-isometry for infinite strings, with interest to their large scale geometries; it is a quasi-isometry between strings that is also color-preserving, where the metric over a string is defined by the difference of positions of letters. It turns out that this "isometry" is not a symmetric relation, and we instead have a partial order on the quotient set of strings by mutual quasi-isometry. We look into several questions that naturally arise, e.g., the structure of the partial order, language equivalence problem over the quotient set, and complexity of deciding the existence of quasi-isometry, and show related results.