



Osamu Hatori (hatori@math.sc.niigata-u.ac.jp) Department of Mathematics, Faculty of Science, Niigata University, Niigata Ikarashi, Japan, *Algebraic structures of isometries on groups*.

ABSTRACT. By the Mazur-Ulam theorem algebraic centers are preserved by surjective isometries on normed linear spaces; in other words, isometries are linear isomorphisms followed by translations. Isometries on the unit circle group (with the usual Euclidean metric) and the group of the integers preserve algebraic structures in the sense that they are isomorphisms followed by translations. An "algebraic center" is not unique for the first case and no "algebraic center" exists for the integers 0 and 1. Despite above we consider the unified theorem for isometries not only on normed linear spaces but also on certain groups.