EXISTENCE OF GROUP NONEXPANSIVE RETRACTIONS AND ERGODIC THEOREMS IN TOPOLOGICAL GROUPS

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Abstract. Suppose that $G$ is a topological group and $C$ a compact subset of $G$. In this paper we define group nonexpansive mappings and then we consider $S = \{T_i : i \in I\}$ as a family of the group nonexpansive mappings on $C$. Also we study the existence of group nonexpansive retractions $P_i$ from $C$ onto $\text{Fix}(S)$ such that $P_i T_i = T_i P_i = P_i$.

Key Words and Phrases: Fixed point, group nonexpansive mapping, topological group, retraction.

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