Kaplan, Lev and Roditty introduced a notion of zero-sum partitions of subsets in Abelian groups. Let $\Gamma$ be an Abelian group of order $n$. We shall say that $\Gamma$ has the zero-sum-partition property (ZSP-property) if every partition $n - 1 = r_1 + r_2 + \ldots + r_t$ of $n - 1$, with $r_i \geq 2$ for $1 \leq i \leq t$ and for any possible positive integer $t$, there is a partition of $\Gamma - \{0\}$ into pairwise disjoint subsets $A_1, A_2, \ldots, A_t$, such that $|A_i| = r_i$ and $\sum_{a \in A_i} a = 0$ for $1 \leq i \leq t$. They conjectured that every Abelian group $\Gamma$, which is of odd order or contains exactly three involutions, has the ZSP-property. The conjecture has been recently proved by Zeng.

In this talk we show some applications of the ZSP-property of groups in some graph labeling problems.