On elementary abelian p–groups which are CI–groups

István Kovács
University of Primorska, Koper, Slovenia
istvan.kovacs@upr.si

For a finite group G and a subset S of G such that $1 \notin S$, the Cayley graph $\mathrm{Cay}(G, S)$ has vertex set G and arcs in the form (x, sx) where $x \in G$ and $s \in S$. A Cayley graph $\mathrm{Cay}(G, S)$ is called a CI–graph if for every subset T with $1 \notin T$, $\mathrm{Cay}(G, T) \cong \mathrm{Cay}(G, S)$ implies that $T = S^\sigma$ for some automorphism $\sigma \in \mathrm{Aut}(G)$. The group G is called a DCI–group if every Cayley graph of G is a CI-graph, and it is called a CI–group if every undirected Cayley graph of G is a CI–graph ($\mathrm{Cay}(G, S)$ is undirected when $S = S^{-1}$). One of the main questions towards the classification of finite CI–groups is that which elementary abelian p-groups are CI–groups (Babai–Frankl, 1978). In my talk I review the status of this problem and also present some recent results based on a joint work with Yan–Quan Feng (Beijing Jiaotong University, China).