WToken Graphs, reconstruction and automorphisms

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Let G be a graph on n vertices and 1 $lek \leq n-1$ an integer. The k-token graph of G is the graph whose vertices are all k-subsets of vertices of G. Where two of them are adjacent if and only if their symmetric difference is an edge of G. Suppose we are given a graph F. We are interested in both the theoretical and algorithmic problem of determining if there exists an isomorphism f from F to $F_k(G)$. This isomorphism is called a k-token reconstruction of F In this talk we explore recent results on this problem and explain a somewhat surprising relationship between the "uniqueness" of the k-token reconstructions of F, and the relationship between the automorphism group of $F_k(G)$ and that of G.