

## The Analysis of Split Graphs in Social Networks Based on the k-Cardinality Assignment Problem

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**Abstract :** In terms of social networks split graphs correspond to the variety of interpersonal and intergroup relations. In this paper we analyse the interaction between the cliques (socially strong and trusty groups) and the independent sets (fragmented and non-connected groups of people) as the basic components of any split graph. Based on the Semi-Lagrangian relaxation for the k-cardinality assignment problem we show the way of how to minimize the socially risky interactions between the cliques and the independent sets within the social network.

**Keywords :** cliques, independent sets, k-cardinality assignment, social networks, split graphs

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