

# A game-theoretical approach for policing decision support

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## Resumen

Recently, many security-related problems have gained increasing attention from a quantitative perspective. In this paper, we propose a game-theoretical approach to model the interaction between police forces and delinquents in public places. In the well-known Stackelberg game, a leader is faced with only one follower. However, in our application, the police are simultaneously faced with many offenders, who may be organized or act independently of each other. This application motivates the development of two games: a classical leader-follower interaction between police and organized criminals on the one hand and a novel approach between the leader and selfishly acting offenders on the other. It is of special interest that the effect of crime displacement under police surveillance be anticipated by the proposed models. Results using data from a simulated environment emphasise how these models can provide decision support for policing outperforming traditional strategies.

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