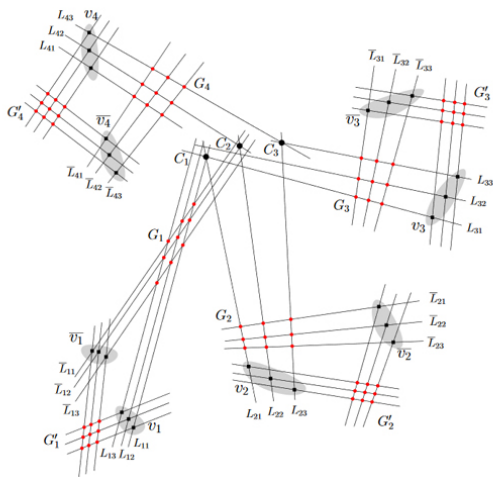


Continuous surveillance of points by rotating floodlights

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Let P and F be sets of $n \geq 2$ and $m \geq 2$ points in a plane, respectively. We study the problem of finding the minimum angle $\hat{I}_{\pm} \in [\frac{2\hat{I}}{m}, 2\hat{I}]$ such that one can install at each point of F a stationary rotating floodlight with illumination angle \hat{I}_{\pm} , initially oriented in a suitable direction, in such a way that, at all times, every target point of P is illuminated by at least one floodlight. All floodlights rotate clockwise at unit speed. We provide bounds for the case in which the elements of $P \cap F$ are on a given line, and present exact results for the case in the plane in which we have two floodlights and many target points. We further consider

the non-rotating version of the problem and look for the minimum angle \hat{I}_{\pm} such that one can install a non-rotating floodlight with illumination angle \hat{I}_{\pm} at each point of F , in such a way that every target point of P is illuminated by at least one floodlight. We show that this problem is NP-hard and hard to approximate.