Cops and robbers on token graphs of trees

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In a traditional game of cops and robbers, it is said that C, the player who controls several individual cops, has *a winning strategy* if he is able to capture R, the robber, following a fixed set of rules, while R is said to have a winning strategy if he can evade capture indefinitely.
It is fairly simple to see that, if C has as many cops as the order of G, then C has a winning strategy. Therefore, it is natural to ask, given a graph G, which is the minimum positive integer r such that C has a winning strategy in a game of cops and robbers playing with r cops. Such integer is called **cop number** of G, and it is well-defined.
Furthermore, it is possible to define a generalization of such a game in which C controls several teams and R controls a team, all such of k non-overlapping tokens that ocuppy the vertices of G. In this case, C wins the game if one of his teams defines the same k-set of V_G as the one defined by the tokens of R, while the movement of the players is made via the sliding of tokens along the edges of G.
This variant of cops and robbers is equivalent to the standard game played instead on the token graph of G rather than on G, which has as vertex set all the k-sets of V_G and two of them are adjacent if their symmetric difference is an edge of G. In this talk we will analyze the afromentioned game, determining upper and lower bounds for the cop number of several families of token graphs coming from trees, particularlly those that arise from stars.

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