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Surrounding an Active Robber

The Surrounding Cop Number is a recently introduced parameter which measures the number of Cops required not to capture the Robber, but rather to occupy all vertices adjacent to the Robber (whether or not a Cop is on the Robber's vertex). In the Cops and Robber variant, Surrounding Cops and Robber, if a Cop ever lands on the Robber's vertex, the Robber doesn't lose, but rather he is simply compelled to move on his next turn to a vertex that doesn't contain a Cop. In this talk, we introduce two similar variants to Surrounding Cops and Robber, Active Robber and Fleeing Robber, that attempt to address certain peculiarities in the Cops' and Robber's respective strategies in Surrounding Cops and Robber. We conclude by discussing an interesting family of graphs on which the Active Number and Fleeing Number differ, and speculate the size of the largest possible difference between these two parameters on a given graph.