

We consider a variant of a cop and robber game with an infinitely fast robber and its relations to other similar games. We compare the helicopter game characterizing tree-width, the classical cop and robber game and its versions with various speeds of the robber. We study the complexity of the infinitely fast robber variant and give an explicit characterization of all the graphs where one cop can win. As the main result, we show a polynomial time algorithm deciding the game on interval graphs. This answers a question from the paper Fomin et al.: On tractability of Cops and Robbers game, IFIP TCS 2008, 171-185. To show the polynomiality of the game on interval graphs, we introduce a new auxiliary game on an interval representation of the graph and show the polynomiality of that game. Then we use game strategy reductions to show the equivalence of the two games.