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On a Generalization of Meyniel's Conjecture on the Cops and Robbers Game

We consider a variant of the Cops and Robbers game where the robber has speed s , and show that in this variant, the cop number of a connected n -vertex graph can be as large as $\Omega(n^{s/s+1})$. This improves the $\Omega(n^{s-3/s-2})$ lower bound of Frieze, Krivelevich, and Loh (Variations on Cops and Robbers, preprint, 2010). We also conjecture an upper bound of $O(n^{s/s+1})$ for the cop number, generalizing Meyniel's conjecture.

Joint work with Noga Alon.