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Containing a robber on a graph

We consider "Containment": a variation of the graph pursuit game of Cops and Robber in which cops move from edge to adjacent edge, the robber moves from vertex to adjacent vertex (but cannot move along an edge occupied by a cop), and the cops win by "containing" the robber—that is, by occupying all of the edges incident with a vertex v while the robber is at v. We develop several bounds on the minimal number of cops required to contain a robber, in particular relating this number to the well-studied "cop-number" in the original Cops and Robber game. (Joint work with John Mackey of Carnegie Mellon University and Danny Crytser of St. Lawrence University.)