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*On Cuts and Cats*

The game of herding cats is a game on graphs where one player (the herder, omnipresent) is seeking to isolate the other (the cat, on a vertex). In each round, the herder permanently cuts one edge from anywhere in the graph, then the cat moves along any non-trivial path to a vertex. The game ends when the cat can no longer move. The score of the game is given by the total number of edges cut to isolate the cat. The cat's objective is to maximize the score (moving as many times as possible), while the herder's objective is to minimize the score (isolating the cat quickly).

We will look at how this game captures a potential end-game of a different game, as well as see some elementary results found so far. We find that this game is monotonic for subgraphs, view a structural property describing how centrality is good for the cat, and look briefly at the case of the infinite graph variant of this game.