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The localization game on directed graphs

In the localization game played on graphs, a set of cops uses distance probes to identify the location of an invisible robber. This talk introduces an extension of this game and its main parameter, the localization number, to directed graphs. We present several bounds on the localization number of a directed graphs, including a tight bound via strong components, a bound using a linear programming problem on hypergraphs, and bounds in terms of pathwidth and DAG-width. We also consider the localization number of random and quasi-random tournaments. This is joint work with Anthony Bonato, Ryan Cushman, and Trent Marbach.