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Cooling Generalized Hypercubes

Graph cooling was introduced as an analogue to the well known game of graph burning. Both of these games are round based processes where fires spread from burning vertices to adjacent vertices and the player (the Arsonist) lights a vertex on fire every round. In graph burning, the player must burn all the vertices of G as quickly as possible, whereas in cooling, the player must burn all the vertices of G as slowly as possible. The hypercube graph of dimension n, written Q_n, is the Cartesian product of n copies of the graph P_2. Its cooling number was recently shown to be exactly n. In this talk, I analyze the cooling number of two families of graphs that can be viewed as extensions of Q_n—Cartesian products of complete graphs K_m and Cartesian products of path graphs P_k. I end the talk with a brief discussion of open problems.

Based on joint work with Anthony Bonato, MacKenzie Carr, Caleb Jones, and Trent Marbach.