Bounds on the q-forcing number for trees and caterpillar cycles

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Here is an abstract: The zero forcing number was introduced as a combinatorial bound on the maximum nullity taken over the set of real symmetric matrices that respect the pattern of an underlying graph. The Z_q-forcing game is an analog to the standard zero forcing game which incorporates inertia restrictions on the set of matrices associated with a graph. This work proves an upper bound on the Z_q-forcing number for trees with $q \geq 3$. Furthermore, we consider the Z_q-forcing number for the k-corona of a cycle on n vertices. We focus on developing game theoretic proofs of upper and lower bounds.

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