

Towards the Burning Number Conjecture

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Graph burning is a deterministic, discrete-time process that models the spread of information or contagion in a graph. At time-step $t = 0$, no vertex is burned. Once a vertex is burned, it remains in that state at future time-steps. At time-step $t > 0$, one new vertex (called a source vertex) is chosen to be *burned*; and any unburned vertex that has a burned neighbor at step $t - 1$, becomes burned at step t . The *burning number* of a graph is the minimum number of time-steps for all vertices to be burned. The Burning Number Conjecture states that for any graph G on n vertices, the burning number is at most $\lceil \sqrt{n} \rceil$. It is well-known that to settle the conjecture, it suffices to settle the conjecture on trees. However, this has been done for only a few classes of trees. We detail recent progress that proves the Burning Number Conjecture for a new family of trees.

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