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Extending Graph Burning to Hypergraphs

We introduce a round-based model much like graph burning which applies to hypergraphs. The rules for this new model are very natural, and generalize the original model of graph burning. In particular, we obtain bounds on the burning number of a hypergraph. We show that arbitrary hypergraphs do not satisfy a bound analogous to the burning number conjecture, and we therefore investigate certain families of hypergraphs such as Steiner triple systems. The lazy burning model on hypergraphs is introduced, along with a new parameter, the lazy burning number. Interestingly, lazily burning a graph is trivial, while lazily burning a hypergraph can be quite complicated. Moreover, the lazy burning model is a useful tool for analyzing the round-based model on hypergraphs.