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Game tree decomposition: which games are sums of other games?

Combinatorial games are usually studied in the context of a specific winning condition (e.g., normal play or misere), and individual game trees are simplified according to the rules of that winning condition and / or universe of play. In this talk (joint work with Neil McKay and Michael Fisher), we study game trees without reference to winning condition - the only permitted simplification is the removal of duplicate options - and we ask, "When is a game literally equal to the disjunctive sum of two other (nonzero) games?" We present an algorithm for determining when a given game G is "composite" and for finding the nonzero H, K such that G is literally equal to $H + K$.