1 Further Results

We list problems that are complete in classes that are likely above PSPACE. For games listed the problem is

given a position in the game, which player wins?

1. Chinese Checkers, and other pebble games, were proven EXPTIME-complete by Kasai, Adachi, and Iwata [6]. Variants of pebble games were proven EXPTIME-complete by Kolaitis & Panttaja [8].

2. Shogi, also known as Japanese Chess, is a 2-player strategy game. It does share some properties of chess, though the games are not that much alike. It was proven EXPTIME-complete by Adachi et al. [1]. The complexity of variants of Shogi was studied by Yato et al. [11].

3. Quixo is a complicated variant of tic-tac-toe. It was shown EXPTIME-complete by Mishiba and Takenaga [9].

4. Cops and Robbers is a game played on a graph where a robber is trying to escape a group of cops trying to encircle them. It was shown EXPTIME-complete by Kinnersley [7].

5. The Custodian Capture game is a game where pieces move like rooks and capture by being on either side of a piece. It was shown EXPTIME-complete by Ito et al. [4].

6. Reachability-Time Games on Timed Automata showed EXPTIME-complete by Jurdzinski and Trivedi [5].

7. Different versions of Angry Birds were shown NP-hard or PSPACE-hard or EXPTIME-hard by Stephenson et al. [10].

8. A Graph Request-Response games is a 2-player graph game where the objectives are ANDS of conditions like if a RED vertex is visited, then later on a BLUE vertex must be visited. Such games where shown EXPTIME-complete by Chatterjee, et. al [2]. A variant of these called Streett games were shown EXPTIME complete by Fijalkow & Zimmermann [3].
References


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