Henrik Eriksson and Markus Jonsson
Level Sizes of the Bulgarian Solitaire Game Tree,
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Abstract

Bulgarian solitaire is a dynamical system on integer partitions of n which converges to a unique fixed point if $n = 1 + 2 + \cdots + k$ is a triangular number. There are few results about the structure of the game tree, but when k tends to infinity the game tree itself converges to a structure that we are able to analyze. Its level sizes turn out to be a bisection of the Fibonacci numbers. The leaves in this tree structure are enumerated using Fibonacci numbers as well. We also demonstrate to which extent these results apply to the case when k is finite.