Title: Bubble Blast 2

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Abstract: This thesis deals with mathematical analysis and solvability of the Bubble Blast 2 game. The first part introduces rules of the game, and a matrix representation of the game. The second part at first describes the two-dimensional game dynamics, and also important terms such as agent, time, and state matrix are defined. It is explained why dealing with solvability of the two-dimensional game is difficult and an easier straight line version of the game is introduced. The main part consists of several theorems about the one-dimensional game that eventually lead to the necessary and sufficient condition of the game solvability with only one click given. All results of this thesis are original, only a minor part is based on the game source code.

Keywords: model of the game, state matrix, state transformation, agent