

## Review on master's thesis

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### Disease propagate mechanism and dynamic evolutionary games

The current study presents an application of mathematical modeling to two important health-care problems: treatment of different types of cancer and prevention of infectious deceases. According to these reasons the research project consists of two parts. In the first part author describes several techniques which can be applied for the effective treatment strategies for cancer research. It has been shown that evolutionary games tools such as G-function or ESS concepts are suitable to evaluate the effect of different types of treatment and forecast the behavior of cancer cells. In the second part author reviews two modifications of classical Susceptible-Infected-Recovered model combined with the complex social networks model and special making-decision procedures.

This research study is a review of the known papers which describe the application of game theory to the medical investigations. However student has collected dataset which is relevant for China and Russia and has analyzed the compatibility of reviewed techniques for these countries. She has shown that according to the density of population in Chine mathematical models concerned to vaccination problem is very important and can be used for estimation of preventive measures during annual epidemics. The research also presents a compilation of models which are related to combination of cancer treatment and shows the adaptation of those mechanisms to the real-life situation in China.

The work has appropriate level of citations; the list of references contains 27 items; the total number of pages is 72. Due to these reasons reviewer supposed that the research work earns a satisfactory mark.

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06.05.2016