Bachelor's thesis: 113 p., 8 tables, 34 pictures, 4 appendices, 34 references.

Subject matter of the study: cognitive modeling.

Scope of the study: cognitive maps in foresight problems.

Object of the study: development of new mathematical tools to deal with cognitive maps in solving foresight problems and studying an example of use.

Results: the author analyzed the literature on fuzzy cognitive modeling and performed a classification of the known modifications of cognitive maps; a new type of cognitive maps is proposed: essentially fuzzy cognitive maps; that is, a special type of cognitive maps which deals well with disconvergent expert notions. New sufficient conditions of stability of certain fuzzy nonlinear cognitive maps are proposed. A program for analyzing essentially fuzzy cognitive maps is developed and it's performance is demonstrated on an example. Using the developed tools, a problem of quality of the education system in Ukraine is studied and ways of solving the problem are proposed.

Contribution: a concept of essentially fuzzy cognitive maps; sufficient conditions of stability of certain types of fuzzy cognitive maps; a strict mathematical definition of scenarios of cognitive maps.

COGNITIVE MODELING, FORESIGHT, FUZZY COGNITIVE MAPS, DISCONVERGENCE OF EXPERTS' NOTIONS