

## ABSTRACT

Bachelor thesis: 92 p., 31 fig., 10 tabl., 2 appendixes, 10 sources.

Theme: The use of regression models for predicting the maximum of the next solar cycle

Object of research: information about one of the most reliable indices of solar activity - sunspots international number or Wolf number.

Objective: development of software for searching the best algorithm for prediction of maximum of solar activity.

Method of research: methods of regression analysis for predicting the maximum of solar activity.

The paper was thoroughly reviewed and the literature on processes of solar activity was analyzed. Experimental data have been collected and their pretreatment has been held.

To predict the maximum of solar activity it was proposed to use regression analysis techniques, where the length, minimum and skewness of all solar cycles were acting as regressors. The results of prediction were analyzed on the base of all previous cycles. Some of the known methods of predicting of solar activity were introduced.

Preliminary data processing, prediction and experimental observations were realized using the application package for numerical analysis MATLAB.

REGRESSION MODELS, CORRELATION ANALYSIS, LEAST SQUARES METHOD, SOLAR CYCLES, SOLAR ACTIVITY, WOLF NUMBER, 13-MONTH MOVING AVERAGE.