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FACULTY OF APPLIED MATHEMATICS AND COMPUTER SCIENCE
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**SEQUENTIAL TESTS FOR SIMPLE ALTERNATIVES
ON STATISTICAL DATA: PERFORMANCE AND APPLICATION**

Master thesis
Speciality 1-31 80 09 – Applied Mathematics and Informatics,
Profile: Computer Data Analysis

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Allowed to the formal defense

«____»_____2021

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Minsk 2021

GENERAL DESCRIPTION OF THESIS

List of keywords: SEQUENTIAL TEST, SEQUENTIAL ANALYSIS, EFFICIENCY CHARACTERISTICS, TREND, ERROR PROBABILITIES, DISTORTION, TIME SERIES.

Thesis goal – construction of sequential statistical tests and analysis of their characteristics under outliers in observations.

Problems to be solved:

- 1) give a survey and an analysis of sequential tests;
- 2) construct the sequential test for time series with trend and analyze its characteristics under distortions;
- 3) modify the sequential test to get the test that is more robust under outliers, to analyze its performance characteristics.

Object of study – sequential statistical tests.

Subject of study – performance characteristics of the sequential tests.

Results of thesis and their novelty – the following main results were obtained in the thesis:

- 1) an analytic survey on sequential tests is given;
- 2) the sequential statistical test is applied for the trend time series data model, and its properties are studied;
- 3) a new sequential test is constructed and its robustness properties are analyzed.

Application area – the results obtained in the thesis can be applied for data analysis in epidemic dynamics studies and in statistical quality control.

Structure of the thesis – the thesis occupies 40 pages. The following units are presented: Introduction, General description, 2 chapters, Conclusion, References, Appendix.