Program:
13.04.02 Electric Power Engineering, MSc

South Ural State University
National Research University

Commitment: Full-time
Department: Automated electric drive

THE FOUNDATIONS OF RESEARCH

Lecturer: Dmitry Sychev, PhD, Associate Professor

South Ural State University
National Research University

Course Description

Academic writing is a skill which is an absolute MUST for contemporary researchers. Upon completion of this course, you will be able to:

- demonstrate efficient planning, drafting and editing skills
- use different resources for literature review
- carry out the experiments, describe and discuss the results of these experiments
- use databases to identify the basic trends in science
- predict the potential applications of research findings
- use appropriate terminology

The course is worth 3 ECTS credits: 16 hours of lectures, 16 hours of practical classes, 16 hours of labs, 70 hours of self-study lab experience. At the end of the course, you are expected to apply everything you have learned to write a research paper.

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Lectures

Module number	Name of the Module	Content of the Modules
1	Iinternational databases (1)	The Scopus database
1	International databases (2)	The Web of Science, Google Scholar, Scival etc
2	Structure of a research paper	Introduction, Literature review and/or the Proposed Method/Algorithm, Methods, Results and Discussion, Conclusion.
3	Abstract and keywords	Basic content of a document Standard nomenclature Abbreviations
4	Introduction part. Research methods	Background, a statement of the problem, a relevant literature, proposed approach, paragraph structure, knowledge gap.
5	Discussion and results. Conclusion	Presentation of results, development of research results, Conclusion

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Workshops

Task number	Module number	Name of the workshop
1	1	The Scopus database
2	3	An abstract of scientific article
3	4	Research methods
4	5	Presentation of results

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laboratory research

Research number	Module number	Name of the Lab
1	4	Application of experimental methods
2	5	Electrical equipment of the “Automated Electric Drive” laboratory

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Laboratory of automated electric drive
Laboratory of computer modeling

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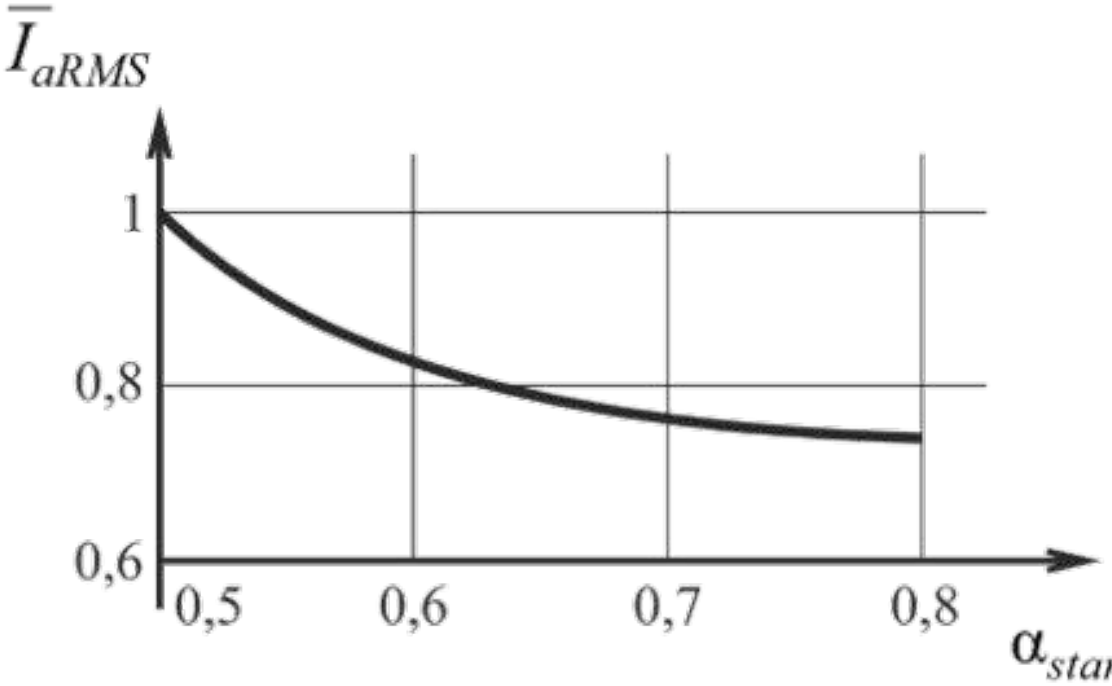
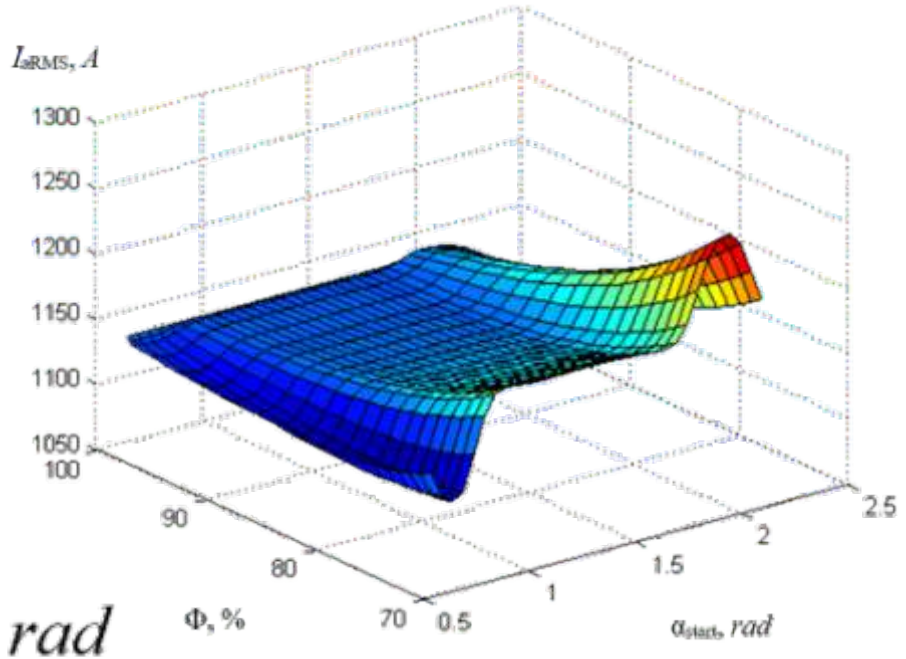
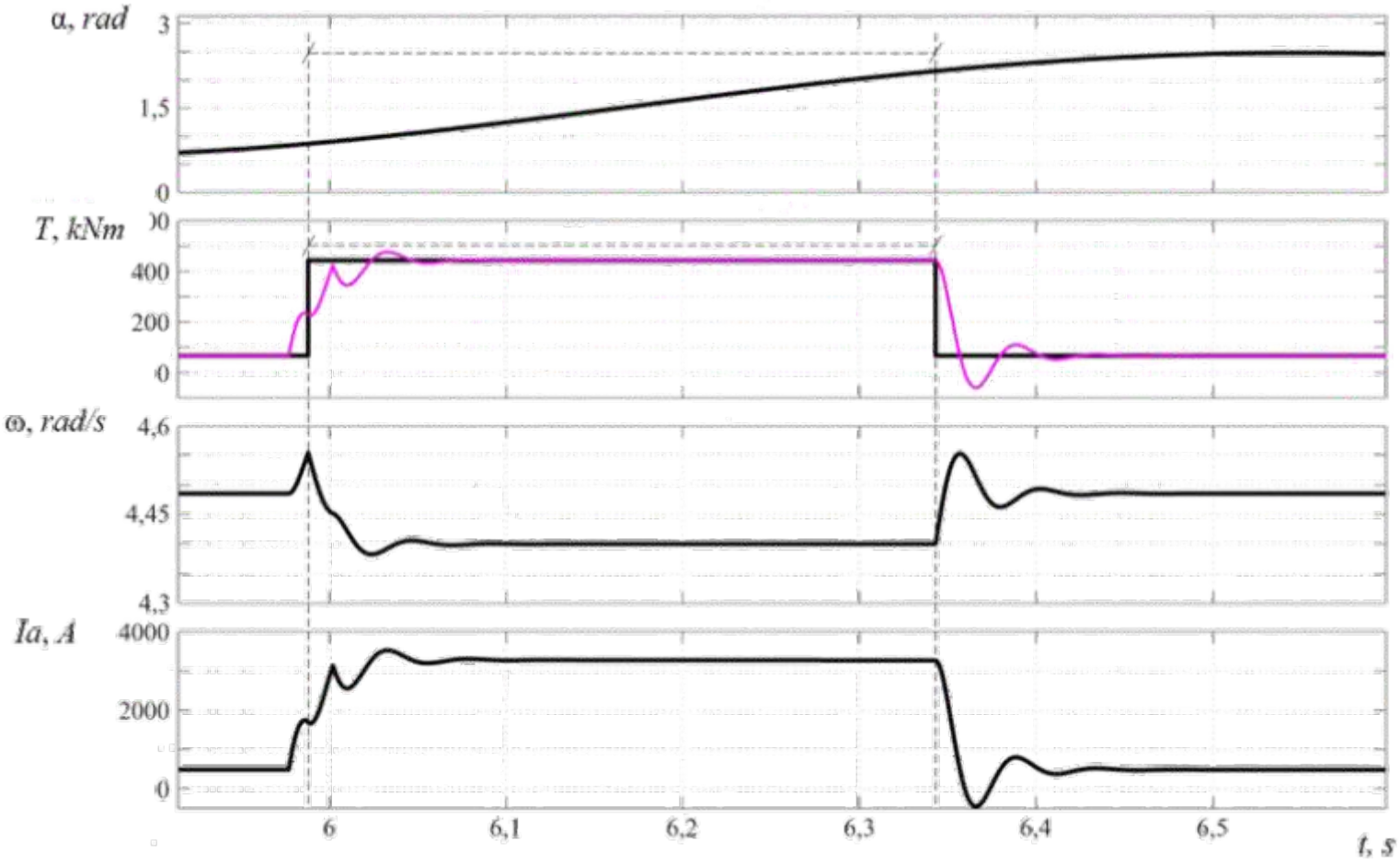
Industrial application I





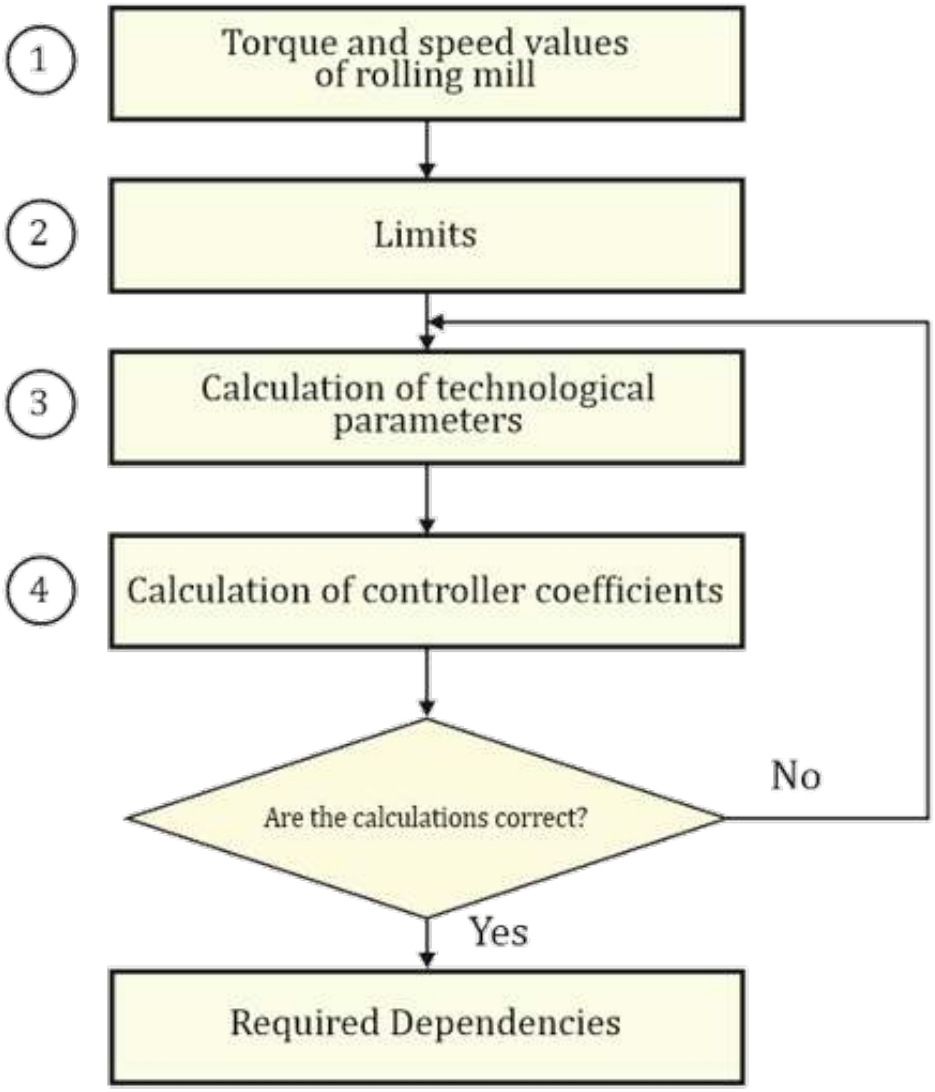
Calculation of the armature current rms value of a DC motor for a duty cycle.

Industrial application II (workshops)



Electric drive dynamics (rolling mill electric drive)

Industrial Applications III



Generalized algorithm
(control system module of an electric drive)

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Thanks for attention!