Niko Muskhelishvili Institute of Computational Mathematics
Scientific Report

2016B

I. Scientific-Research Works Planned and Implemented in 2016 Funded by the State Budget of Georgia

I.2 Transitional (multi-year) research project.

#	Planned and Implemented work with the indication of scientific field and direction	Work Supervisor	Work Performers
1	**Direction 1:** Computational methods in the tasks of mathematical physics and engineering mechanics Mathematics; Computational mathematics.	J. Sanikidze	M. Zakradze, M. mirianashvili. G. Khatiashvili, Z. Khukhunashvili, D. Kurdghelaidze, Z. Sanikidze, Ed. Abramidze, K. Kupatadze, A. Chaduneli, N. Koblishvili, N. Peikrishvili, El. Abramidze

#	Planned and Implemented work with the indication of scientific field and direction	Work Supervisor	Work Performers
2	**Direction 2:** Processing of mathematical models and strongly optimized algorithms of social-economic tasks. Mathematics; Mathematical Modeling	D. Ugulava	J. Giorgobiani, M. Nachkebia, T. Chantladze, Z. Kipshidze, D. Zarnadze, M. Nikoleishvili, T. Khurodze, G. Baghaturia, M. Menteshashvili, L. Khachapuridze, N. Metonidze

#	Name of the Task	Work Supervisor	Work Performers

2.1	**Task 1.** Mathematical Models for Some Microeconomic Problems of Market and Sectoral Economics	J. Giorgobiani	M. Nachkebia, M. Nikoleishvili, T. Khurodze, L. Khachapuridze, N. Metonidze

#	Name of the Task	Work Supervisor	Work Performers
2.2	**Task 2.** Constructing optimal and highly optimal (central) spline algorithms for uncertainty by the worse, average and probable settings	D. Zarnadze	D. Zarnadze, D. Ugulava

#	Name of the Task	Work Supervisor	Work Performers
2.3	**Task 3.** New type symmetric and asymmetric cryptosystems	D. Ugulava	T. Chantladze, Z. Kipshidze

#	Name of the Task	Work Supervisor	Work Performers
2.4	**Task 4.** Investigation of initial, characteristic and nonclassical problems for second order quasi linear hyperbolic equations with parabolic degeneracy	M. Menteshashvili	G. Baghaturia, M. Menteshashvili

#	Planned and Implemented work with the indication of scientific field and direction	Work Supervisor	Work Performers
3	**Direction 3:** Stochastic analysis in algebraic structures. Applications in functional analysis, statistics and discreet optimization. Mathematics; Probability theory and mathematical statistics, functional analysis, discreet	V. Tarieladze	S. Chobaniani, A. Lashkhi, , B. Mamporia, V. Kvaratskhelia,, G. Giorgobiani, V. Berikashvili, P. Kobakhidze

	optimization		
#	Name of the Task	Work Supervisor	Work Performers
3.1	**Task 1:** Compact summary of vectors. Applications in functional analysis and scheduling tasks	S. Chobaniani	V. Tarieladze, B. Mamporia, V. Kvaratskhelia,, G. Giorgobiani
#	Name of the Task	Work Supervisor	Work Performers
3.2	**Task 2.** The problem of inducing operators in solving the problem of stochastic differential equations in the Banach space	B. Mamporia	V. Tarieladze, G. Chelidze

#	Name of the Task	Work Supervisor	Work Performers
3.3	**Task 3.** Assessment of linear and nonlinear regression parameter in infinite dimensional cases. Asymptomatic Normative Assessment	V. Tarieladze	S. Chobaniani, B. Mamporia, V. Kvaratskhelia, G. Giorgobiani, V. Berikashvili, P. Kobakhidze

#	Planned and Implemented work with the indication of scientific field and direction	Work Supervisor	Work Performers

4	**Direction 4:** Construction, processing and verification of relevant software algorithms for linear and quasi-linear differential equations and equations systems. Computational Mathematics, Mathematical Modeling, Informatics.	H. Meladze	H. Meladze, M. Pkhovlishvili, G. Silagadze, G. Tsertsvadze, G. Ghlonti, I. Chogovadze M. Papiashvili