ЕУРАЗИЯ ҰЛТТЫҚ УНИВЕРСИТЕТІ

TWMS

TWMS 2017

VI CONGRESS OF THE TURKIC WORLD MATHEMATICAL SOCIETY
October 2–5, 2017 Astana – Kazakhstan

TURKIC WORLD MATHEMATICAL SOCIETY
MINISTRY OF EDUCATION AND SCIENCE
OF THE REPUBLIC OF KAZAKHSTAN
L.N. GUMILYOV EURASIAN NATIONAL UNIVERSITY

ТҮРКІТІЛДЕС ЕЛДЕР МАТЕМАТИКАЛЫҚ ҚОҒАМЫ VI КОНГРЕСІНІҢ ТЕЗИСТЕР ЖИНАҒЫ

ABSTRACTS OF VI CONGRESS OF THE TURKIC WORLD MATHEMATICAL SOCIETY

СБОРНИК ТЕЗИСОВ VI КОНГРЕССА МАТЕМАТИЧЕСКОГО ОБЩЕСТВА ТЮРКОЯЗЫЧНЫХ СТРАН

October 2-5, 2017
Astana, Kazakhstan

TURKIC WORLD MATHEMATICAL SOCIETY

MINISTRY OF EDUCATION AND SCIENCE
OF THE REPUBLIC OF KAZAKHSTAN

L.N. GUMILYOV EURASIAN NATIONAL UNIVERSITY

ТҮРКІТІЛДЕС ЕЛДЕР МАТЕМАТИКАЛЫҚ ҚОҒАМЫ VI КОНГРЕСІНІҢ ТЕЗИСТЕР ЖИНАҒЫ

2–5 қазан, 2017

ABSTRACTS OF VI CONGRESS OF THE TURKIC WORLD MATHEMATICAL SOCIETY

October 2–5, 2017

СБОРНИК ТЕЗИСОВ VI КОНГРЕССА МАТЕМАТИЧЕСКОГО ОБЩЕСТВА ТЮРКОЯЗЫЧНЫХ СТРАН

2–5 октября, 2017

Astana–2017

УДК 51

Editorial Board:

Editors - in Chief

B.T. Zhumagulov, T.Sh. Kalmenov, M.A. Sadybekov, N.A. Bokayev

Managing Editors

Zh.B. Mukanov, D.T. Matin, M. Raikhan

Executive Editors

T. Akhazhanov, Zh. Baytuyakova, K. Yesmakhanova, A. Igenberlina, A. Iskakova, G. Karshygina, G. Kenzhebekova, A. Syzdykova, A. Temirkhanova.

Expert commission

Adamov A., Burgumbaeva S., Ibraev A., Ospanov K.N., Koshkarova B., Kozybaev D.

Abstracts Abstracts of the VI Congress of the Turkic World Mathematical Society — Astana: L.N. Gumilyov Eurasian National University, 2017. – 394 p.
ISBN 978-9965-31-907-5

The book contains abstracts of the participants of the VI Congress of the Turkic World Mathematical Society

The book of the Congress will be beneficial for specialists in the field of Mathematics and its applications, as well as for students in Mathematics and Information Technologies.

International Program Committee:

Chairman:

Zhumagulov Bakhytzhan	Academician of the National Academy of Sciences of the Republic of Kazakhstan, Honorary President of Turkic world mathematical society

Co-chairs:

Sydykov Yerlan	Rector of L.N. Gumilyov Eurasian National University, Astana
Otelbayev Mukhtarbai	Academician of the National Academy of Sciences of the Republic of Kazakhstan
Kalmenov Tynysbek	Academician of the National Academy of Sciences of the Republic of Kazakhstan

Members:

Aliev Fikret	Academician, Azerbaijan
Alimov Shafkat	Academician, Uzbekistan
Ashyraliyev Allaberen	Professor, Turkmenistan
Bliev Nazarbai	Academician, Kazakhstan
Borubaev Altay	Academician, Kyrgyzstan
Gadjiev Akif	Academician, Azerbaijan
Hacisalihoglu Hilmi	Professor, Turkey
Kharin Stanislav	Academician, Kazakhstan
Mardanov Misir	Professor, Azerbaijan
Nigmatulin Robert	Academician, Russia
Panahov Etibar	Professor, Turkey
Salakhitdinov Makhmut	Academician, Uzbekistan
Sultanaev Yudat	Professor, Bashkortostan, Russia
Tagizade Azad	Professor, Azerbaijan
Taimanov Iskander	Academician, Russia
Zhainakov Amanbek	Academician, Kyrgyzstan
Zhumadildaev Askar	Academician, Kazakhstan

International Organizing Committee:

Chairman:

Bokayev Nurzhan	Vice-President of the Turkic World Mathematical Society, Professor, Kazakhstan

Honorary co-chairs:

Hacısalihoğlu Hilmi	Honorary President of the Turkic World Mathematical Society, Turkey
Mardanov Misir	Honorary President of the Turkic World Mathematical Society, Azerbaijan
Borubaev Altai	President of the Turkic World Mathematical Society, Academician, Kyrgyzstan

The members of the International Organizing Committee:

Abdibekov Ualikhan	Professor, Kazakhstan
Agakhanov Nazar	Professor, Turkmenistan
Akhmed-Zaki Darkhan	Professor, Kazakhstan
Akhtyamov Azamat	Professor, Bashkortostan, Russia
Alimov D.	Professor, Turkmenistan
Amrin Aslanbek	Vice-minister of the MES RK, Kazakhstan
Aripov Mirsaid	Professor, Uzbekistan
Avkhadiev Farid	Professor, Russia, Tatarstan
Bayramogly Memmed	Professor, Azerbaijan
Bektemesov Maktagali	Professor, Kazakhstan
Bilalov Bilal	Corresponding member, Azerbaijan
Chekeev Asylbek	Professor, Kyrgyzstan
Colak Rifat	Professor, Turkey
Dzhumabaev Dulat	Professor, Kazakhstan
Ergut Mahmut	Professor, Turkey
Fazullin Ziganur	Professor, Bashkortostan, Russia
Fayazov Kudratillo	Professor, Uzbekistan
Gasimov Yusif	Professor, Azerbaijan
Guliev Vagif	Corresponding member of AS Azerbaijan
Hasanov Elman	Professor, Turkey
Hasanoglu Alemdar	Professor, Turkey
Huseynov R.	Corresponding member, Azerbaijan
Huseyn-Zade Sabir	Professor, Russia
Isgenderov Nizameddin	Professor, Azerbaijan
Jenaliyev Muvasharhan	Professor, Kazakhstan
Kabanikhin Sergey	Corresponding member of RAS, Russia
Kalimoldaev Maksat	Academician, Kazakhstan
Kaltayev Aidarkhan	Professor, Kazakhstan

Kanguzhin Baltabek	Professor, Kazakhstan
Kenzhebaev Kenzhegali	Professor, Kazakhstan
Kerimbekov Akylbek	Professor, Kyrgyzstan
Kylan Alimkhan	Professor, Kazakhstan
Kydyrbekuly Almatbek	Professor, Kazakhstan
Mammadova Gamar	Senior Researcher, Azerbaijan
Moldazhanova Asemgul	Professor, Kazakhstan
Muratbekov Musakhan	Professor, Kazakhstan
Nursultanov Erlan	Professor, Kazakhstan
Oinarov Ryskul	Academician, Kazakhstan
Ospanov Kordan	Professor, Kazakhstan
Pankov Pavel	Corresponding member, Kyrgyzstan
Ramazanov Murat	Professor, Kazakhstan
Ramazanov Murat	Professor, Bashkortostan, Russia
Sadullaev Azimbay	Academician, Uzbekistan
Sadybekov Makhmud	Corresponding member, Kazakhstan
Safarova Nargiz	Senior Researcher, Azerbaijan
Sarsenbi Abdizhahan	Professor, Kazakhstan
Smailov Esmuhambet	Professor, Kazakhstan
Sharipbayev Altynbek	Professor, Kazakhstan
Temirbekov Nurlan	Corresponding member of NAS, Kazakhstan
Temirgaliev Nurlan	Professor, Kazakhstan
Tosun Murat	Professor, Turkey
Tuğ Orhan	Professor, Iraq
Umirbaev Ualbai	Corresponding member, Kazakhstan-USA
Yuldashev Ziyavidin	Academician, Uzbekistan
Zharkenov Askar	Assistant Professor, Kazakhstan

Local Commettee:

Chairman:
Dzhaychibekov Nurbolat, Professor, Dean of the Faculty of Mathematics and Mechanics of L.N. Gumilyov ENU Adamov Abilmazhin, Professor, Burgumbaeva Saule, Associate Professor, Ibraev Askar, Professor, Iskakov Kazizat, Professor, Koshkarova Bakhytty, Associate Professor, Kozybaev Daniyar, Associate Professor, Nurbekova Janat, Professor, Nurmoldin Eric, Associate Professor, Tusupov Zhamalbek, Professor, Tashatov Nurlan, Associate professor, Sagyndykov Hakim, Associate professor.

Secretariat:
Mukanov Zhalgas (Managing editor), Akhazhanov Talgat, Baituyakova Zhuldyz, Yesmakhanova Kuralay, Iskakova Ayman, Karshygina Gulden, Kenzhebekova Gulmira, Matin Dauren, Raikhan Mady, Syzdykova Aizhan, Temirkhanova Ainur

Nugmanova G., Sagidullayeva Zh. Integrable spin systems and its exact solutions . . 98
Nurakhmetov D., Aniyarov A., Skrzypacz P. Finite element discretizations for transmission problems 99
Nurgabyl D., Bekish U. Asymptotic behavior of solutions of linear singularly perturbed general separated boundary value problems with boundary jumps 100
Obodoeva G. Constructing of regularizing operator for Volterra integral equations of the third kind in the space of continuous functions and in the Hölder space 101
Ospanov K., Eskabylova Zh. On the smoothness property of the third order differential operator 102
Rysbaiuly B., Adamov A. Development of methods for calculating the nonlinear coefficients of diffusion and moisture conductivity of soil moisture and justifying their reliability 103
Rysbaiuly B., Azhibekova A Solving a coefficient inverse problem for a parabolic equation 104
Rysbaiuly B., Karashbayeva Zh., Olzhayev O. Numerical simulation of the inverse problem of heat and moisture transfer 105
Tokybetov Zh.A., Tamaev S., Boltirekova R.A. On some boundary-value problems for the system of the first-order differential equations 106
Omurov T., Alybaev A., Omurov M. Solving of multidimensional inverse problem for differential equation of the third order in unbounded domain 108
Omuraliev A., Abylaeva E. Asymptotics of the solution of parabolic problems with multipoint stationary phase 109
Omuraliev A., Esengul kyzy P. Asymptotics of the solution of a problem of optimal control with a power boundary layer 110
Ozdemir Y., Erdogan S. Nonlocal Boundary Value Problems for hyperbolic-Schrödinger equations with multipoint nonlocal boundary condition 111
Pakhyrov Z., Temirov M., Khalilov A. About boundedness of solutions of weakly nonlinear differential equations of second order with delays 112
Panakhov E.S., Yilmaz E., Gulsen T. Conformable Fractional Dirac System and Some Existence Results on Time Scales 113
Piskarev S. The fractional Cauchy problem without semigroup 114
Romanov V.G. The problem of recovering the permittivity coefficient from the modulus of the scattered electromagnetic field 115
Sarsenbi A. The theorem on the basis property of eigenfunctions of second order differential operators with involution 116
Shishlenin M., Novikov N. Numerical simulation of two-dimensional acoustic tomography 117
Usenov I.A. Combined method for approximation of regularized solutions 118
Yergaliyev M.G. On a problem of heat equation in an infinite angular domain 119
Yuldasheva A. An inverse problem for a quasilinear parabolic equation 120
Zhumatov S.S. On instability of a program manifold of basic control systems 121
Panakhov E.S., Ercan A. Inverse nodal problem for integro-differential operator with jump conditions 122
Pankov P., Zheentaeva Zh. Shift operators with finite-dimensional dominance for evolutional equations 124

ON A PROBLEM OF HEAT EQUATION IN AN INFINITE ANGULAR DOMAIN

M.G. Yergaliyev[1,a]

[1] *Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan*
E-mail: [a] *ergaliyev.madi.g@gmail.com*

This problem is a particular case ($\omega = 1$) of the family of problems in which the domain degenerates with law $x = t^{\omega}$, $\omega > 1/2$.

In the infinite corner domain $G = \{(x;\ t) : t > 0,\ -k_1 t < x < k_2 t\}$ we investigate a following boundary value problem for the heat equation

$$\frac{\partial u(x,t)}{\partial t} - \frac{\partial^2 u(x,t)}{\partial x^2} = 0, \tag{1}$$

$$u(x,t)_{|\,x=-k_1 t} = 0,\ \ u(x,t)_{|\,x=k_2 t} = 0, \tag{2}$$

where $k_1 \geq 0, k_2 > 0$.

Funding: The authors were supported by the target program No. 0085/PTSF-14 from the Ministry of Science and Education of the Republic of Kazakhstan and by the grant project No. 0823/GF4 (2015–2017) from the Ministry of Science and Education of the Republic of Kazakhstan.

Keywords: heat equation, homogeneous boundary value problem, nontrivial solution

2010 Mathematics Subject Classification: 35K02, 35K20

REFERENCES

[1] M.M. Amangaliyeva, M.T. Jenaliyev, M.T. Kosmakova, and M.I. Ramazanov About Dirichlet boundary value problem for the heat equation in the infinite angular domain, *Boundary Value Problems*, **2014**:213 (2014), 1–21.

[2] M.M. Amangaliyeva, M.T. Jenaliyev, M.T. Kosmakova, and M.I. Ramazanov On one homogeneous problem for the heat equation in an infinite angular domain, *Siberian Mathematical Journal*, **56**:6 (2015), 982–995.

[3] M.M. Amangaliyeva, M.T. Jenaliyev, M.T. Kosmakova, and M.I. Ramazanov On a Volterra equation of the second kind with incompressible kernel, *Advances in Difference Equations*, **2015**:71 (2015), 1–14.

Szalay L., 278

Taşköprü K., 157
Tabyshov R.T.,, 135
Tagiev R., 31
Talipova M.Zh., 138
Tamaev S., 106
Tapeyeva S., 136
Tashpulatov S., 234
Tasmambetov Zh.N., 137, 138
Temirbekov N., 303, 310, 340
Temirbekova L., 341
Temirkhanova A., 235
Temirov M.,, 112
Temizsu F., 237
Tileubayev T.E., 238
Tleubergenov M., 240
Tleukhanova N., 215, 241
Toigonbaeva A., 36
Tokmagambetov N., 211
Tokmagambetov N. , 97
Tokybetov Zh.A., 106
Toleugazy Y., 163
Torebek B.T., 139
Tosun M., 185, 257
Tuğ O., 236
Tulenov K., 219, 242
Tuleuov B.I., 332
Tungatarov N. , 67
Tungatarova M., 327
Tungushbaeva D., 140
Turarov A., 340
Turdubaeva K.T., 384
Turganbayeva A., 49
Turgumbayev M., 189
Turmetov B., 243
Tursunov D.A.,, 141, 142
Tussupov J.A., 353
Tutar A., 277
Tuz M., 143
Tynybekova S., 385
Tynybekova S.D.,, 270

Ulbrikht O., 279, 280
Urazbaev G.U.,, 144
Usenov I.A., 118

Uteshova R. , 66
Uyanik N., 246

Valeev N.F., 231
Vasilyev V., 145
Veksler A., 59
Velieva N., 296
Volkov Y., 269, 273

Wene G., 281

Yakhshimuratov A., 88
Yakovlev A., 259
Yang X., 52
Ybraev A. G., 361
Yergaliyev M.G., 119
Yermolenko D., 342
Yersutanova Z., 136
Yeshkeyev A.,, 279, 280
Yesmakhanova K., 136, 140
Yessirkegenov N., 245
Yildiz I., 246
Yilmaz E.,, 113
Yuldashev Z.Kh., 343
Yuldasheva A., 120
Yuldasheva M., 367

Zaigrajew A., 293
Zakiryanova G., 247
Zhakhayev B., 264
Zhakhina R.U., 137
Zhapsarbayeva L., 230, 248
Zheentaeva Zh., 124
Zhoraev A., 282
Zhumabayev M.Zh., 82
Zhumagulov B.T., 310
Zhumanov B., 265
Zhumatov S.S., 121
Zhunussova L., 345
Zhunussova Z.Kh., 150
Zhunussova Zh., 249
Zikirova G. A., 386
Zulpukarova D.I., 387

TURKIC WORLD MATHEMATICAL SOCIETY

ABSTRACTS
OF VI CONGRESS OF THE
TURKIC WORLD MATHEMATICAL SOCIETY

ТҮРКІТІЛДЕС ЕЛДЕР
МАТЕМАТИКАЛЫҚ ҚОҒАМЫ
VI КОНГРЕСІНІҢ ТЕЗИСТЕР ЖИНАҒЫ

СБОРНИК ТЕЗИСОВ VI КОНГРЕССА
МАТЕМАТИЧЕСКОГО ОБЩЕСТВА
ТЮРКОЯЗЫЧНЫХ СТРАН

October 2-5, 2017
Astana, Kazakhstan

Компьтерде өңдеп,
баспаға дайындағандар: Муканов Жалгас, Матин Даурен

Тираж 250 экз
Формат 60x84 1/16. Усл. 24,6 п.л.
Бумага офсетная. Шрифт «Times New Roman»
Заказ № 15096

Отпечатано в типографии национального университета
ЕНУ имени Л.Н.Гумилева
г. Астана, 010008, ул. Кажымукана, 13/1